# Sampling and Analysis Report Phase II Environmental Site Assessment General Services Administration 400 15<sup>th</sup> Street, SW Auburn, Washington





**General Services Administration** 

Project Delivery Branch (10PCP) 400 15<sup>th</sup> Street, SW Auburn, Washington 98001-6599

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#### **EXECUTIVE SUMMARY**

Eastern Research Group, Inc. (ERG) was contracted to perform a Phase II Environmental Site Assessment (ESA) at the United States (U.S.) General Services Administration (GSA) Auburn Complex, located at 400 15th Street SW in Auburn, Washington. This Sampling and Analysis Report documents the results of the Phase II ESA.

The GSA Auburn Complex consists of about 138 acres of property, including 129 acres currently owned by GSA and 9 acres (at the south end) that GSA sold to the City of Auburn in the early 2000s. The property is flat and is improved with asphalt drive areas, asphalt parking areas, grassy areas, and various buildings. GSA required a Phase I ESA and a Phase II ESA at the GSA Auburn Complex for the purpose of a potential property transfer and previously contracted with ERG to perform the Phase I ESA.

ERG's Phase I ESA report (ERG, 2015a) identified six Recognized Environmental Conditions (RECs). The primary goal of this Phase II ESA was to perform subsurface investigations to verify the absence or presence of four of the six RECs. A secondary goal was to retroactively conduct confirmatory sampling at the underground storage tank (UST) south of Building 7 in accordance with current Washington State Department of Ecology (Ecology) requirements for tank closure.

ERG performed all sampling activities in accordance with the Sampling and Analysis Plan (S&AP) (ERG, 2016a) from April 18-21, 2016. ERG drilled 18 borings and collected four groundwater samples (one each from four of the borings) and 28 soil samples (two each from 14 of the borings) and submitted them to the laboratory for analysis. ERG also collected and submitted to the laboratory field duplicate samples (one soil and one groundwater).

ERG identified the following key conclusions and recommendations based on the data derived from the Phase II ESA. Refer to Section 5, Conclusions and Next Steps, for a complete list of conclusions and recommendations.

#### **Conclusions**

- 1. One groundwater sample obtained from the UST south of Building 7 was above the natural background levels for total petroleum hydrocarbons diesel range organics (TPH DRO) (447 mg/L) but below the Model Toxics Control Act (MTCA) Method A cleanup level for TPH DRO (500 mg/L). TPH DRO was not detected in the other three groundwater samples at the UST south of Building 7 and the detection limits were below the MTCA Method A cleanup level.
- 2. BTEX compounds (benzene, toluene, ethylbenzene, xylenes, and MTBA) were not detected in any of the groundwater samples and the detection limits were below the MTCA Method A cleanup levels.
- 3. TPH DRO, TPH gasoline range organics (GRO), BTEX, and polychlorinated biphenyls (PCBs) were not detected in any of the soil samples and the detection limits were below the MTCA Method A cleanup levels.
- 4. ERG identified the following conclusions based on metals results:
  - Six samples exceeded the site-specific MTCA Method A cleanup level for arsenic (6.5 mg/kg), which was based on the natural background level. The arsenic results for these samples ranged from 6.7 mg/kg to 16.8 mg/kg,

- Two samples (one at the former gas station and one at the small building near the gas station) exceeded natural background levels for lead (42 and 91 mg/kg) but were below the MTCA Method A cleanup level (220 mg/kg).
- Five samples at varying locations and soil depths exceeded the MTCA Method A cleanup level for selenium (0.8 mg/kg). The selenium results for these samples ranged from 1.3 mg/kg to 2.4 mg/kg, which are all lower than the federal screening level for selenium of 5,800 mg/kg.
- The levels of arsenic, lead, and selenium pose a low risk to human health and wildlife during current or future industrial land use activities.
- 5. Six of the 29 soil samples had some detectable results for semivolatile organic compounds (SVOCs), including polycyclic aromatic hydrocarbons (PAHs). ERG identified the following conclusions based on the SVOC and PAH results:
  - The two soil samples from boring W-3, located in the Eastern Wayard, exceeded natural background levels for 11 SVOCs.
  - The soil sample from sampling point W-3A (obtained at a depth of 2 to 3 feet) exceeded the site-specific MTCA Method A cleanup level for four SVOCs: benzo(a)pyrene, benzo(ghi)perylene, carbazole, and fluoranthene. The soil from sampling point W-3B (obtained from the same boring but at a depth of 7 to 8 feet) exceeded the site-specific MTCA Method A cleanup level for carbazole and fluoranthene.
  - The levels of SVOCs pose a low risk to human health and wildlife during current or future industrial land use activities.

#### Recommendations

- 1. ERG recommends GSA consider implementing institutional controls to minimize exposure to analytes exceeding MTCA Method A cleanup levels for arsenic, selenium and SVOCs. These results include the following sample points: HL-1B (selenium), HL-3A (arsenic), HL-3B (arsenic and selenium), SB-1A (arsenic), W-1A (arsenic), W-3A (arsenic, selenium and SVOCs), W-3B (SVOCs), RR-2A (selenium), RR-3A (arsenic) and RR-4B (selenium). ERG anticipates institutional controls (mitigation) may be appropriate. The MTCA Method A cleanup level for selenium is based on the protection of wildlife. If GSA implements an institutional control to minimize wildlife exposure, the applicable MTCA Method A cleanup level would increase from 1.2 mg/kg to 5,800 mg/kg, which is well in excess of the maximum analytical value (2.4 mg/kg).
- 2. ERG does not recommend any further investigation, monitoring, or mitigation beyond the possible mitigation to address arsenic, selenium, or SVOCs (if deemed necessary) as suggested in recommendation 1.
- 3. ERG recommends GSA maintain a copy of the results related to the UST south of Building 7. These results provide documentation of confirmatory sampling at this location to verify levels of petroleum-related constituents are below state requirements for tank closure.

4. It is possible that future excavation will uncover unsampled areas that are contaminated. ERG recommends that GSA address schedule and budget-related needs to address this potential when planning any future excavation activities. ERG recommends an in-field survey be conducted during excavation activities at locations found to exceed the MTCA Method A cleanup levels.

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# ABBREVIATIONS, ACRONYMS, AND SYMBOLS

% Percent

°C degree Celsius

°F degree Fahrenheit

ACM Asbestos-Containing Material
AST Aboveground Storage Tank

ASTM American Society for Testing and Materials
BTEX Benzene, Toluene, Ethylbenzene, and Xylenes

CFR Code of Federal Regulations

DHMSM Defense Healthcare Management System

DRO Diesel Range Organics

**Ecology** Washington State Department of Ecology

ERG Eastern Research Group, Inc.

EPA Environmental Protection Agency

ESA Environmental Site Assessment

GPS Global Positioning System
GPR Ground-Penetrating Radar
GRO Gasoline Range Organics

dasonne Range Organies

GSA General Services Administration

H&SP Health and Safety Plan

HDPE High Density PolyethyleneHSO Health and Safety OfficerIDW Investigation Derived Waste

kg kilogram

L liter

LBP Lead-Based Paint

mg milligram mL milliliter

MTCA Model Toxics Control Act

oz ounce

PAH Polycyclic Aromatic Hydrocarbons

PCB Polychlorinated Biphenyl
PID Photoionization Detector

PPE Personal Protective Equipment

ppm parts per million
QA Quality Assurance

QAPP Quality Assurance Project Plan

QC Quality Control

REC Recognized Environmental Condition

RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference S&AP Sampling and Analysis Plan

SVOC Semivolatile Organic Compound
TEE Terrestrial Ecological Evaluation
TPH Total Petroleum Hydrocarbons

U.S. United States

USCS Unified Soil Classification System

UST Underground Storage Tank
VOC Volatile Organic Compound

WAC Washington Administrative Code

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#### 1. INTRODUCTION

Eastern Research Group (ERG) was contracted to perform a Phase II Environmental Site Assessment (ESA) at the United States (U.S.) General Services Administration (GSA) Auburn Complex, located at 400 15th Street SW in Auburn, Washington. This Sampling and Analysis Report documents the results of the Phase II ESA.

ERG performed sampling activities from April 18-21, 2016. During this time, ERG drilled 18 borings and collected four groundwater samples (one each from four of the borings) and 28 soil samples (two each from 14 of the borings) and submitted them to the laboratory for analysis. ERG also collected and submitted field duplicate samples (one soil and one groundwater) to the laboratory for analysis.

ERG performed sampling activities in accordance with the Sampling and Analysis Plan (S&AP) for the Phase II ESA (ERG, 2016a). The S&AP was prepared in accordance with the following: American Society for Testing and Materials (ASTM) E 1903 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process; Code of Federal Regulations (CFR) 40 Part 312.10 Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries; Washington State Department of Ecology (Ecology) Publication #90-52 Guidance for Site Checks and Site Assessments for Underground Storage Tanks; and ERG's Quality Management Plan.

# 1.1 Facility Description

The city of Auburn is located in King County, 25 miles south of Seattle and 13 miles northeast of Tacoma. The GSA Auburn Complex is located one mile from downtown Auburn.

The GSA Auburn Complex comprises about 138 acres of property, including 129 acres currently owned by GSA and 9 acres (at the south end) that GSA sold to the City of Auburn in the early 2000s. The property is flat and is improved with asphalt drive areas, asphalt parking areas, grassy areas, and various buildings. Buildings located on GSA-owned land include eight large World War II-era warehouse structures, the GSA Administrative Building (another World War II-era structure), the federal Childcare Center (constructed in 1997), the former GSA Fleet Management Center (constructed in 2000), and a few support buildings. Buildings located on city-owned land include a fire station, a former gas station, and a few small storage buildings. The entire property is enclosed by a fence. A portion of the property is secured by a gate.

Current uses of the buildings include GSA's Region 10 administrative headquarters (including an operations and maintenance center for the complex), a teleservice center for the Social Security Administration, office space for Federal Protective Services, training space for Defense Healthcare Management System (DHMSM), a childcare facility, and a fire station. Many of the warehouses are currently vacant.

The GSA Auburn Complex is bounded by C Street SW on the north, 15th Street SW on the east, and adjacent commercial and industrial facilities on the south and west. Figure A-1 of Appendix A, Site Map, depicts prominent site features, adjoining properties, and areas where sampling occurred.

## 1.2 **Project Background**

GSA previously contracted with ERG to perform a Phase I ESA at the GSA Auburn Complex. GSA requested the Phase I ESA for the purpose of a potential property transfer.

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ERG's Phase I ESA report (ERG, 2015a) identified the following Recognized Environmental Conditions (RECs):

- 1. **Lead-based paint (LBP)** is present on the exteriors of the former gas station, all eight large warehouses (Buildings 1-8), and the GSA Administration building. LBP is also present on the fire pump equipment within the Pump House and in the floor striping, interior beam, and door trim paint of the Washington State Building.
- 2. **Asbestos-containing material (ACM)** is present within the transite siding and window glazing of all eight large warehouses.
- 3. **An underground storage tank (UST) located south of Building 7** that was formerly used to supply heating fuel to Building 7 appears to have been abandoned in place, but no documentation of the closure or confirmatory sampling is available.
- 4. **In the area of the former gas station**, there were an extensive number of rusted drums and 1-gallon paint containers, as well as piles of metal debris. Two aboveground storage tank (ASTs) were previously used to store gasoline and diesel fuel and one AST is still present (but no longer used). ERG identified two specific locations in which there is a high potential for hazardous materials, waste materials, or petroleum products to have been released: the former gas station and a small building near the gas station.
- 5. **Discarded hydraulic lifts** located in the gravel/grassy vacant area to the east of Building 5, which appear to have been there for a long time, apparently were removed from the warehouse docks. The Phase I ESA was unable to determine if any hydraulic fluid remained in the lifts or had been released over time to the ground below.
- 6. **The former onsite railroad tracks** were reportedly constructed in the early 1940s using scavenged rail that dates to the early 1900s. The age of the railroad tracks on the subject property indicates the potential for hazardous materials such as creosote, which is used to preserve railroad ties, to be present. ERG identified two specific locations of potential contamination: the railroad alley (between the warehouses) and the Eastern Wayard (located near the eastern boundary of the property).

Figure 1-1 provides a historical view of the site, illustrating historical features associated with some of these RECs. Appendix A, Site Map, provides a recent aerial view of the site, illustrating current features associated with some of these RECs.

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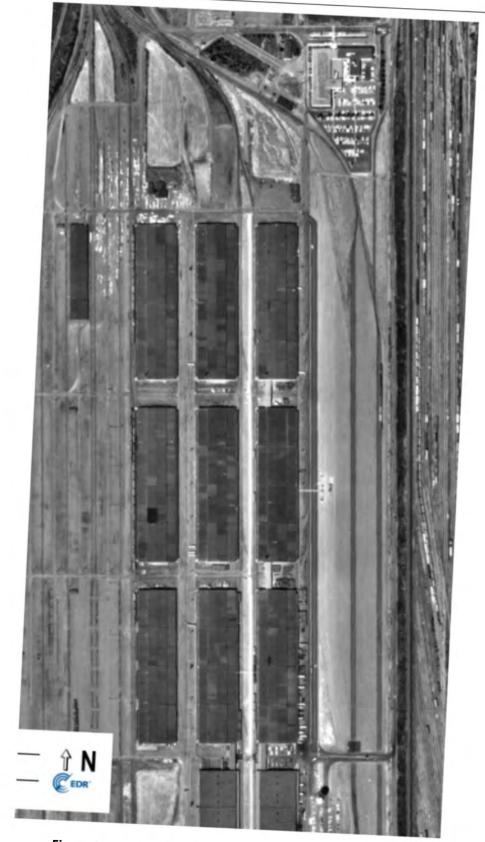


Figure 1-1. Historical Aerial View of GSA Auburn Complex

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#### 1.3 Statement of Objectives

In accordance with GSA's Performance Work Statement for this project (GSA, 2016), the primary goal of this Phase II ESA was to perform subsurface investigations to verify the absence or presence of four of the six RECs (numbers 3 through 6) identified in Section 1.2, Project Background. A secondary goal was to retroactively conduct confirmatory sampling at the UST south of Building 7 in accordance with current state requirements for tank closure.

GSA intended for the Phase II ESA to provide answers to the following key questions:

- 1. Do concentrations of target analytes exceed background concentrations at the UST south of Building 7, the former gas station, the small building near the gas station, the discarded hydraulic lifts, the railroad alley, or the Eastern Wayard?
- 2. If the concentrations of target analytes exceed background concentrations, what potential risks are posed to human health or the environment during future land use activities (e.g., construction)?
- 3. If the concentrations of target analytes exceed background concentrations, is further investigation, monitoring, or mitigation recommended?
- 4. What are the approximate boundaries and size for the UST south of Building 7?

#### 1.4 Limitations

The intent of this assessment is to verify the presence or absence of RECs; however, no ESA can completely eliminate uncertainty regarding the potential for RECs in connection with the subject property. This Phase II ESA did not perform "due diligence" to ensure that the GSA Auburn Complex is free from environmental contamination.

The findings of this ESA are not intended to serve as an audit for health and safety compliance issues pertaining to improvements or activities at the subject property. ERG is not liable for the discovery or elimination of hazards that may potentially cause damage, accidents, or injury.

Observations, conclusions, and/or recommendations pertaining to environmental conditions at the subject property are necessarily limited to conditions observed, materials reviewed, and environmental samples collected and analyzed at the time this study was undertaken. It is not the purpose of this Phase II ESA to fully determine the actual extent of contamination, if any, at this subject property. This could require additional exploratory work, including additional sampling and laboratory analysis. No warranty, expressed or implied, is made with regard to the conclusions or recommendations to be developed based on this Phase II ESA.

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# 2. FIELD ACTIVITIES

The Phase II ESA included the following field activities:

- Utilities and UST location.
- Direct-push drilling.
- Soil and groundwater sampling.
- Field monitoring and screening.
- Sample preparation and delivery.
- Sample analysis.

ERG documented planned procedures and other details (e.g., sampling locations, required analyses) relevant to these activities in a S&AP. The final version of the S&AP was Revision 2 dated April 13, 2016 (ERG, 2016a). ERG distributed this plan to all field personnel participating in the Phase II ESA, including ERG's subcontractors.

ERG documented health and safety requirements and responsibilities in a Health and Safety Plan (H&SP) (ERG, 2016b). The final version of the H&SP was Revision 1, dated April 15, 2016. All field personnel, including subcontractors, certified that they read and understood the plan prior to executing any field activities.

The following contractors participated in the sampling program:

- Program contractor (ERG).
- Utilities and UST location (CNI Locates).
- Direct-push driller (ESN Northwest).
- Analytical laboratory (SPECTRA Laboratories).

The Health and Safety Officer (HSO), Mark Briggs, held a health and safety tailgate meeting prior to the initiation of fieldwork. All work was conducted in EPA Level D personal protective equipment (PPE), which consisted of gloves, steel-toed shoes, and coveralls. No health and safety issues were encountered during the sampling program.

#### 2.1 **Utilities and UST Location**

On April 18, 2016, ERG's subcontractor CNI Locates identified all utilities in the areas where ERG intended to advance soil borings. CNI Locates also identified the orientation and approximate diameter of the UST near Building 7. ERG personnel flagged the planned sampling locations. CNI Locates utilized a Geophysical Survey Systems, Inc. ground-penetrating radar (GPR), model SIR® 4000 with a 400 megahertz antenna, to accomplish the following:

- Located and marked all subsurface utilities within a 10-feet wide by 10-feet long square around each of the 18 sampling locations (boring locations) identified in the S&AP.
- Conducted a GPR survey to locate and mark any subsurface structures or anomalies within the same 10-feet wide by 10-feet long squares.
- Conducted a GPR survey at the UST south of Building 7 to locate and mark the approximate boundaries of the UST.

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ERG selected the planned sampling locations to avoid known utility locations (i.e., those shown on utilities drawings included as Attachment B). If the GPR detected subsurface anomalies, the sampling locations were moved. Section 3.3, Deviations, discusses sampling points relocated by more than two feet from the planned location.

The GPR equipment was able to determine the locations of two of the four sides of the UST (south and west sides) and the vertical distance (depth) to the top of the UST – 2 feet at the shallowest location.

The GPR equipment was not able to determine precise locations of two of the four sides of the UST south of Building 7 or the vertical distance (depth) to the bottom of the UST. However, ERG was able to estimate the tank volume to be between 10,500 and 16,500 gallons based on the following known or assumed information<sup>1</sup>:

- The GPR scan determined the length of the tank (east-west axis) is about 28 feet.
- The GPR scan determined the tank is cylindrical, as the depth to the top of the tank was shallowest in the middle and greater at the north/south edges.
- ERG assumed a tank diameter ranging between 8 and 10 feet, based on the difference between the GPR-measured depth at the middle of the tank (about 2 feet) and the edges of the tank (about 7 feet), as well as the measured tank length of 28 feet. These dimensions correspond with typical dimensions for a cylindrical tank with a diameter of 8 or 10 feet.

The approximate location of the UST is illustrated in Figure B-1 of Appendix B, Scaled Maps Illustrating Sampling Locations.

As discussed in the S&AP, Ecology requires a sample be obtained about 1 to 2 feet below the depth of a UST (Ecology, 1991). The sampling team planned to identify the required depth based on the GPR results. While it could not directly measure the depth of the UST, the GPR provided sufficient data to substantiate the tank diameter was not greater than 10 feet (see third bullet above). Based on the GPR-measured depth to the top of the tank (2 feet) and the assumed maximum tank diameter of 10 feet, the Crew Chief estimated the depth of the bottom of the UST was 12 feet (or less). Ecology's required sampling depth of 1 or 2 feet below the bottom of the UST, resulted in a target boring depth of 13 to 14 feet. The Crew Chief conservatively advanced soil borings at the UST to a depth of 15 feet to ensure the state requirement was met. Section 3.3, Deviations, discusses the limitations during the GPR scan.

#### 2.2 Sample Collection and Field Analysis

The sampling team conducted sample collection and field analysis in accordance with the S&AP, with minor exceptions as discussed below and in Section 3.3, Deviations.

The drilling subcontractor advanced 18 soil borings using direct-push technology (Figure 2-1). The subcontractor drilled each soil boring to a depth of 15 feet at the UST south of Building 7 and a depth of 10 feet at all other sampling locations. (Section 2.1, Utilities and UST Location, discusses why the bore hole depth was greater at the UST south of Building 7.) The drawings provided in

 $<sup>^1</sup>$  ERG calculated the tank volume using the following formula for the volume of a cylinder: V=  $\pi$  \* (D/2)<sup>2</sup> \* L, where V is volume in cubic feet (ft³),  $\pi$  is a constant (3.14), D is the diameter in feet, and L is the length in feet. For example, 3.14 \* (10/2)<sup>2</sup> \* 28 = 2,198 ft³ or 16,442 gallons based on a conversion of 1 ft³ = 7.48 gallons.

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Appendix B, Scaled Maps Illustrating Sampling Locations, illustrate the approximate locations of the borings. These locations correspond to the planned locations identified in the S&AP with the following exceptions:

- Boring UST-1 was drilled north of the center of the UST (rather than right at the center of the UST) to remain well clear of a nearby buried water line.
- Boring UST-3 was relocated approximately 6 feet southwest of the planned location, as the GPR could not positively identify the southern edge of the UST.
- A second boring south of the UST was not drilled (shown as boring UST-4 in the S&AP), because the south side of the UST was close to the adjacent building. The Crew Chief consider drilling a second boring on the north side of the UST but decided that approach was not feasible due to the gas line in that area.
- The fourth UST boring (labelled in the field as UST-4 but shown in the S&AP as UST-5) was drilled approximately 8 feet north of the UST (rather than immediately adjacent to the tank) to remain well clear of a nearby buried gas line.
- Boring UST-5 was relocated approximately 3 feet west of the planned location, due to utilities and other obstructions.
- An additional boring, W-3, was drilled at the Eastern Wayard. This third Wayard boring was added to offset (from a cost standpoint) the reduction in UST borings from five to four and to provide additional data in the Eastern Wayard.

ERG conducted continuous sampling. Each acetate liner was extruded and cut open to reveal the entire five-foot long soil column (Figures 2-2 and 2-3). ERG visually inspected the soil and documented observations in the Soil Boring Logs, Appendix C. No visual signs of contamination or odors were detected in any of the soil borings nor was any interface between native soils and backfill soils observed in any of the soil borings. The sampling team noted other pertinent information on the Soil Boring Logs, including global positioning system (GPS) coordinates for each boring location. The sampling team a used a handheld Garmin eTrex GPS for this purpose.

The sampling team used a handheld photoionization detector (PID) (RAE Systems MiniRAE 3000) to field analyze each soil column for the presence of volatile organic chemicals (VOCs) (Figure 2-4). The team calibrated and operated the PID in accordance with the S&AP and the manufacturer's requirements. The PID did not detect any VOCs at any of the sampling locations.

The sampling team collected each sample in pre-preserved sample containers in accordance with Table 2-1, Sampling and Analysis Summary. The S&AP identified that samplers would collect two samples ("deep" and "shallow") from each boring, with the exception of the borings at the UST south of Building 7, where they would collect only one sample from each boring. In accordance with the S&AP and because there were no visual signs of contamination, no visual signs of a soil transition, and no detection of VOCs using the PID, the sampling team obtained each "shallow" soil sample at a depth of about 2-3 feet and each "deep" soil sample at about 7-8 feet. Exceptions were GS-1A and the GS-1A dupe, which required more soil and therefore were obtained over a depth from 2-5 feet. Also, HL-2B was obtained at a depth of 9 feet based on field conditions. The sampling team included the suffix "A" in each "shallow" sample identification number (e.g., GS-01-A) or "B" in each "deep" sample identification number.

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The sampling team encountered groundwater at the UST south of Building 7. The depth of groundwater varied from about 14 to 14.5 feet because of the corresponding variations in surface elevation. Groundwater was not encountered at the other sampling locations. However, the samplers encountered moisture at a depth of 10 feet at the former gas station and the nearby small building. The Crew Chief believes that groundwater table in those locations is likely near 10 feet.



Figure 2-1. Drilling at the Auburn Complex



Figure 2-2. Acetate Liner Being Inserted



Figure 2-3. Removing the Soil Column

In accordance with the S&AP, the sampling team obtained a single groundwater sample from each boring at the UST South of Building 7. Prior to collecting each groundwater sample, the sampling team used water finding paste (Gasoila) to check each bore hole for the presence of floating

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petroleum products, which were not detected. This check was not performed at other sampling locations because groundwater was not encountered elsewhere.

The sampling team collected duplicate groundwater samples at UST-4B and duplicate soil samples at GS-1A and labelled those samples UST-4B Dupe and GS-1A Dupe, respectively. The sampling team collected additional sample volume at UST-2B to facilitate the analytical laboratory's matrix spike and matrix spike duplicate analyses.

Soil and water residuals were collected in separate 55-gallon drums (one for solids and one for liquids). See Section 2.5, Investigation Derived Waste, for additional discussion of the Investigation-Derived Waste (IDW).



Figure 2-4. Using the PID to Field Analyze for VOCs

The S&AP identified priorities for groundwater sampling and analytical priorities, to be used in the event that groundwater recharge was limited. However, the sampling team observed no limitations in the availability of groundwater from the bore holes at the UST south of Building 7. Therefore, the sampling team proceeded with collecting all necessary samples.

After sampling at each bore hole concluded, the drilling subcontractor filled the bore hole with bentonite and patched the surface if the bore hole went through asphalt or concrete. The purpose of backfilling and patching is to ensure the hole will be less permeable than surrounding soils and will not provide a conduit for any surface materials to migrate into groundwater.

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# Table 2-1. Sampling and Analysis Summary

		Analysis	втех	TPH-GRO	TPH-DRO	PAHs	PCBs	RCRA 8 Metals (Note F)	Semivolatile Organics
		Method	EPA-8260C (Note D)	NWTPH-GX	NWTPH-DX	EPA-8270D (Note D)	EPA-8082A	EPA-6020 EPA-7471B EPA-7196A	EPA-8270D
		Soil Preservation	MeOH, Cool to 4°C	MeOH, Cool to 4°C	Cool to 4°C	Cool to 4°C	Cool to 4°C	Cool to 4°C	Cool to 4°C
		Soil Container	5035 kits	5035 kits		Two 8-c	oz glass jars (to	tal per sample)	
		Groundwater Preservation	HCl, Cool to 4°C	HCl, Cool to 4°C	HCl, Cool to 4°C	Cool to 4°C	cool to 4°C	Filter, then HNO <sub>3</sub> to pH <2, Cool to 4°C (Note H)	Cool to 4°C
		Groundwater Container (Note A)	40 mL gl (quan	lass vials tity=2)	1 L amber glass	1 L amber glass (quantity = 2)	1 L amber glass	250 mL HDPE (Note H)	1 L amber glass (quantity = 2)
Sampling Location	Number and Depth of Borings	Sampling Points and Sample Identification							
UST South of Building 7 (Location 1 on Site Map)	5 borings, 15 feet	UST-1B, UST-2B, UST-3B, UST-4B, UST-4B Dupe (Note B, C)	5	-	5	- (Note E)	- (Note E)	-	-
Former Gas Station (Location 6 on Site Map)	2 borings, 10 feet	GS-1A, GS-1A Dupe GS-1B, GS-2A, GS-2B	5	5	5	5	5	5	-
Small Building Near Former Gas Station (Location 7 on Site Map)	2 borings, 10 feet	SB-1A, SB-1B, SB-2A, SB-2B	4	-	4	4	4	4	-
Discarded Hydraulic Lifts (Location 2 on Site Map)	3 borings, 10 feet	HL-1A, HL-1B, HL-2A, HL-2B, HL-3A, HL-3B	6	-	6	6	6	6	-
Former Railroad Alley (Location 8 on Site Map)	4 borings, 10 feet	RR-1A, RR-1B, RR-2A, RR-2B, RR-3A, RR-3B, RR-4A, RR-4B	-	-	-	-	-	8	8
Eastern Wayard (Former Railroads) (Location 9 on Site Map)	2 borings, 10 feet	W-1A, W-1B, W-2A, W-2B, W-3A, W-3B	-	-	-	-	-	6	6
	20	5	20	15	15	29	14		

See table notes on next page.

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#### **Notes fo**r Table 2-1:

- A) The sampling team selected one in 20 samples (within each matrix) for matrix spike and matrix spike duplicate analyses, which was performed at the laboratory. Additional sample volume was collected for these samples.
- B) The A or B designation in the Sampling Points and Sample Identification column denotes shallow (A) or deep (B).
- C) In accordance with the S&AP, ERG did not collect shallow (A) samples at the UST south of Building 7. ERG did collect one soil duplicate and one groundwater duplicate from among the sampling points at the UST south of Building 7.
- D) When analyzing for PAHs, the analytical laboratory reported results for the 18 PAH compounds within Method 8270D, rather than the complete results (74 compounds, which include the 18 PAH compounds) reported when analyzing the full range of SVOCs under Method 8270D.
- E) In accordance with GSA's Performance Work Statement (GSA, 2016) and the S&AP, the analytical laboratory did not analyze PAHs and PCBs at the UST south of Building 7 as the TPH-DRO concentrations did not exceed the Model Toxics Control Act (MTCA) regulatory levels.
- F) The RCRA 8 metals are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

Acronyms and abbreviations: BTEX = benzene, toluene, ethylbenzene, and xylenes; DRO = diesel range organics; GRO = gasoline range organics, HCl = hydrochloric acid, HPDE = high density polyethylene, L = liter, MeOH = methanol, mL = milliliter, N/A = not applicable, 0.oz = ounce, PAH = polycyclic aromatic hydrocarbon, PCB = polychlorinated biphenyl, RCRA = Resource Conservation and Recovery Act, TPH = total petroleum hydrocarbons, UST = underground storage tank.

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#### 2.3 <u>Sample Preparation and Delivery</u>

Samples were placed in laboratory-cleaned and pre-preserved (where applicable) glass or plastic sample containers. All sample containers were individually labeled as outlined in the S&AP. All soil and water samples were kept on ice from collection through delivery and all samples were delivered to the laboratories within 24 hours of their collection. Chain-of-custody forms accompanied all samples and included the unique sample identification, the type of sample, the date and time collected, and the analyses to be performed.

#### 2.4 Laboratory Analysis

SPECTRA Laboratories performed all laboratory analyses of the soil and groundwater samples. Table 2-1 summarizes the analyses for each sample and the information on the sample containers, preservation, and test methods used for each sample. The test methods listed in Table 2-1 are identical to the proposed methods listed in the S&AP, with the addition of hexavalent chromium (i.e., chromium VI).

Chromium VI analysis was added to ensure the samples did not exceed the Method A cleanup level for that particular type of chromium. Chromium is generally present in two forms: chromium VI and trivalent chromium (i.e., chromium III). The S&AP called for analysis of total chromium only, anticipating that the total chromium results might not exceed the Method A cleanup level for chromium VI. However, the concentration of total chromium in some samples exceeded the Method A cleanup level for chromium VI (19 mg/kg). Although chromium VI is generally much less prevalent in the environment, ERG recommended that GSA consider supplemental analysis of the relevant samples (i.e., those for which total chromium exceeded 19 mg/kg) to demonstrate that the amount of chromium VI is below the Method A cleanup level. GSA contracted directly with the SPECTRA Laboratories to obtain this additional analysis, which confirmed that the levels of chromium VI are below the Method A cleanup level.

Section 4, Analytical Results, summarizes all analytical results (see Table 4-1 through Table 4-5), including the supplemental chromium VI analyses.

# 2.5 <u>Investigation Derived Waste</u>

Excess soils and liquids (e.g., groundwater not collected, equipment decontamination water) generated during the sampling effort were captured in drums. At the end of the sampling effort, the drums were staged at the site pending analytical results.

ERG evaluated the analytical data relative to EPA's thresholds for hazardous waste. ERG converted the laboratory Resource Conservation and Recovery Act (RCRA) metals results from milligram per kilogram (mg/kg) to milligram per liter (mg/L) based on the conservative assumption that 100 percent of the metals would leach from the soil and into the liquid extraction volume outlined in the Toxic Characteristic Leaching Procedure (TCLP) method. ERG then compared the RCRA metals results that could theoretically be obtained (in mg/L) by the TCLP leaching procedure to EPA's TCLP thresholds for hazardous waste. ERG determined there was not enough metals in the soil to exceed EPA's TCLP thresholds for hazardous waste even if all the metals from the soils extracted into the TCLP leaching fluid.

ERG provided a summary of the analytical results to the drilling subcontractor, who transported and disposed of the drums of IDW in accordance with all applicable regulations.

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# 3. QUALITY CONTROL AND QUALITY ASSURANCE

All quality control (QC) and quality assurance (QA) activities associated with this Phase II ESA were performed in accordance with the S&AP, which served as the Quality Assurance Project Plan (QAPP) for the project (ERG, 2016a).

SPECTRA Laboratories is accredited under Chapter 173-50 of the Washington Administrative Code (WAC), analyzed each sample in accordance with the analytical methods identified in Table 2-1 of the S&AP, and also prepared and analyzed quality control samples as outlined in Section 4.1 of the S&AP.

#### 3.1 Data Quality Analysis

ERG and the analytical laboratory reviewed the analytical data and associated QA/QC summary report provided by the laboratory to identify those data that are acceptable to analyze and report.

All samples were properly preserved and analyzed within the required holding times. All appropriate procedures for sampling and chain of custody were followed.

ERG considered the accuracy, precision, completeness, and representativeness of the sampling data in determining their acceptability. ERG or the analytical laboratory evaluated these factors in accordance with the methods outlined in the S&AP, which are briefly discussed below.

#### **Accuracy**

Accuracy is a measure of the agreement between a measurement and an accepted reference standard or the true value of the parameter being measured. The analytical laboratory calculated percent recovery and communicated these results to ERG in QA/QC summary reports (Appendix D). ERG reviewed these reports and ensured all percent recovery results met predetermined specifications. These results indicate the analytical method met accuracy requirements.

#### Precision

Precision is the agreement among individual repeated measurements of the same parameter. The analytical laboratory evaluated precision based on relative percent difference (RPD) results, evaluated these results relative to predetermined specifications, and communicated the results of this evaluation to ERG in QA/QC summary reports. These results indicate the sample collection, handling, preparation, and analysis process met precision requirements.

#### **Completeness**

Completeness assesses the amount of valid data obtained from a measurement system. Completeness may be affected by samples that could not be collected or data that do not meet acceptability criteria. ERG calculated the number of anticipated analytical results, the number of received laboratory analyses, and the number of unacceptable analytical results (based on accuracy and precision results identified above).

ERG calculated percent completeness using the following formula:

Percent Completeness = <u>Actual Number of Analytical Results</u> Anticipated Number of Analytical Results

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The actual percent completeness was 101 percent because the Crew Chief elected to obtain one additional Eastern Wayard sample (W-3) in lieu of the fifth UST sample that was planned but not obtained. Each Wayard sample underwent more numerous analyses relative to each UST sample, which explained why the result exceeded 100 percent. This percent completeness exceeded ERG's expectation of 95 percent or better completeness.

## Representativeness

Representativeness is the degree to which the data collected accurately and precisely represent the characteristic of an environmental condition. ERG assured representativeness through the design of the S&AP, by using standard data collection methods and procedures, and by adequately documenting the data collection process in this Sampling and Analysis Report.

#### **Summary**

Based upon the evaluation of accuracy, precision, completeness, and representativeness, ERG concludes all analytical data meet quality requirements and may be used for further analysis.

#### 3.2 Quality of Documents and Records

ERG performed all planned reviews of documents and records as identified in the S&AP or the project-specific quality plan.<sup>2</sup>

## 3.3 Deviations from Sampling and Analysis Plan

The Crew Chief made the following minor modifications to the sampling approach in the field or at the laboratory to achieve the objectives of the Phase II ESA:

- Boring UST-1 was drilled north of the center of the UST (rather than right at the center of the UST) to remain well clear of a nearby buried water line.
- Boring UST-3 was relocated approximately 6 feet southwest of the planned location, as the GPR could not positively identify the southern edge of the UST.
- A second boring south of the UST was not drilled (shown as boring UST-4 in the S&AP), due
  to the south side of the UST being located close to the adjacent building. The Crew Chief
  consider drilling a second boring on the north side of the UST but decided that approach
  was not feasible due to the gas line in that area.
- The fourth UST boring (labelled in the field as UST-4 but shown in the S&AP as UST-5) was drilled approximately 8 feet north of the UST (rather than immediately adjacent to the tank) to remain well clear of a nearby buried gas line.
- Boring UST-5 was relocated approximately 3 feet west of the planned location, due to utilities and other obstructions.

<sup>&</sup>lt;sup>2</sup> Refer to the S&AP for discussion of the project-specific quality plan.

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• An additional boring, W-3, was drilled at the Eastern Wayard. This third Wayard boring was added to offset (from a cost standpoint) the reduction in UST borings from five to four and to provide additional data in the Eastern Wayard.

- The GPR equipment was not able to determine precise locations of two of the four sides of the UST south of Building 7 or the vertical distance (depth) to the bottom of the UST. However, ERG was able to estimate the tank volume between 10,500 and 16,500 gallons and provide an illustration approximating the outer boundaries of the tank.
- Chromium VI analysis was added to ensure the samples did not exceed the Method A cleanup level for that particular type of chromium. This additional analysis was performed in accordance with Method 7196A.

The deviations above should not have any negative impact on the analytical results.

## 3.4 Deficiencies and Corrective Actions

No deficiencies were encountered during the Phase II ESA.

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# 4. ANALYTICAL RESULTS

Table 4-1 through Table 4-5 summarize the laboratory analytical results for this Phase II ESA. ERG established the site-specific soil and groundwater cleanup levels presented in Table 4-1 through Table 4-5 in accordance with Ecology's guidance for the MTCA Method A approach (Ecology, 2005a and 2005b). Appendix E, Basis for MTCA Cleanup Limits, presents a detailed data table related to these cleanup levels. ERG ensured the quality of this data as discussed in Section 3.1, Data Quality Analysis.

ERG established natural background levels using statistical analysis of the analytical results. Ecology guidance recommends obtaining and analyzing multiple independent samples to calculate natural background levels (Ecology, 2005a). Independent samples were not obtained due to the widespread industrial use at and adjacent to this site. Instead, when evaluating the analytical results, ERG excluded high values from the statistical analysis to ensure that the presence of potential contamination (i.e., high values) would not artificially increase the natural background level. The calculated natural background levels are included in Appendix E, Basis for MTCA Cleanup Limits and the supporting calculations for the natural background levels are included in Appendix F

Appendix D, Analytical and QC/QA Reports, presents the complete laboratory reports. Appendix G, Detailed Table of PAH and SVOC Results, provides a more detailed summary of PAH and SVOC data relative to what is shown in Table 4-5.

Table 4-1. Analytical Results, TPH

			hod A up Level																				
		Soil <sup>a</sup>	Water <sup>a</sup>				-						Sam	ple									
				UST-	UST-	UST-	UST-	UST-4B		GS-1A													
Analyte	Matrix	mg/kg	ug/L	1B	2B	3B	4B	(Dupe)	GS-1A	(Dupe)	GS-1B	GS-2A	GS-2B	SB-1A	SB-1B	SB-2A	SB-2B	HL-1A	HL-1B	HL-2A	HL-2B	HL-3A	HL-3B
Diesel <sup>b</sup>	Soil	2,000	N/A	-	- 1		4	1	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
	Water	N/A	500	<100	<100	<100	447	<100	-			_	_	-	1-1	-	-		-	- 1			
Oil b	Soil	2,000	N/A		- 1		-	-	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
	Water	N/A	500	<500	<500	<500	<500	<500	-	-		- 1	- 1	-		-	-	- 1	1 - 1	-	-	T - T	
GRO	Soil	30	N/A	-	-	- 1	-	_ = =	<5.0	<5.0	<5.0	<5.0	<5.0	-	1 - 1	-	- 1	-	1-1	- 1	_	4 - 4	- 1

#### Notes:

- a) Refer to the text of this section and Appendix E for more detail on development of site-specific Method A cleanup levels.
- b) TPH results are reported as "diesel" and "oil" in accordance with the NWTPH-Dx method. "Diesel" is expressed as diesel range organics (DRO) and "Oil" is expressed as oil range organics (ORO) in other states.

  Yellow highlight = Result exceeds the MTCA Method A cleanup level.

Blue highlight = Result exceeds natural background level but is below the MTCA Method A cleanup level.

Table 4-2. Analytical Results, PCBs

			thod A up Level															
		Soil a	Water <sup>a</sup>								Sample							
Analyte	Matrix	mg/kg	ug/L	GS-1A	GS-1A (Dupe)	GS-1B	GS-2A	GS-2B	SB-1A	SB-1B	SB-2A	SB-2B	HL-1A	HL-1B	HL-2A	HL-2B	HL-3A	HL-3B
Total PCBs <sup>b</sup>	Soil	0.94	N/A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

#### Notes:

- a) Refer to the text of this section and Appendix E for more detail on development of site-specific Method A cleanup levels.
- b) Total PCBs data is derived using EPA's SW-846 Method 8082 to determine which Aroclor mixture (a trade name for PCB mixtures) was present, then a set of standards applicable to that particular Aroclor is used to quantify the amount of PCBs present.

  Yellow highlight = Result exceeds the MTCA Method A cleanup level.

Blue highlight = Result exceeds natural background level but is below the MTCA Method A cleanup level

## **Table 4-3. Analytical Results, RCRA 8 Metals**

	Method A Cleanup Level																					
	Soil <sup>a</sup>											Sample										
Analyte	mg/kg	GS-1A	GS-1A (Dupe)	GS-1B	GS-2A	GS-2B	SB-1A	SB-1B	SB-2A	SB-2B	HL-1A	HL-1B	HL-2A	HL-2B	HL-3A	HL-3B	W-1A	W-1B	W-2A	W-2B	W-3A	W-3B
Arsenic	6.5	4.2	4.2	5.1	4.6	5.8	16.8	1.9	4.2	3.0	2.8	3.2	3.0	4.1	16.2	16.2	15.0	2.9	5.5	5.3	7.1	6.4
Barium	1320	42.9	37.6	52.9	48.1	46.0	28.8	13.7	35.5	28.6	27.4	23.2	30.1	29.4	45.9	49.5	43.4	23.2	42.2	45.2	59.6	41.5
Cadmium	2	0.2	<0.2	<0.2	0.4	<0.2	0.6	<0.2	0.4	0.2	<0.2	0.4	0.3	<0.2	0.2	0.4	<0.2	<0.2	0.2	<0.2	<0.2	<0.2
Chromium <sup>b</sup>	135	14.3	14.5	16.7	14.6	21.4	27.1	18.3	12.7	14.4	12.7	11.3	14.1	11.9	18.9	19.3	15.7	11.5	21.1	22.3	21.3	21.7
Chromium VI <sup>c</sup>	3.1	- 1		-	- 1	0.12	<0.1	-	-	-	-	-	- (	-	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1
Lead	220	2.3	1.9	2.2	6.0	42.2	91.1	1.1	11.4	14.5	1.7	1.7	2	2.4	3.2	7.7	4.3	1.5	5.4	4.6	8.4	6.2
Selenium	1.2	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	1.0	<0.3	<0.3	<0.3	2.0	<0.3	<0.3	0.5	2.4	1.0	0.8	<0.3	<0.3	1.7	0.8
Silver	3900	0.4	0.4	0.4	0.4	0.3	1.0	0.8	0.4	0.4	1.1	1.1	0.7	0.7	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.2
Mercury	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

	Method A Cleanup Level								
	Soil <sup>a</sup>				Sa	mple			
Analyte	mg/kg	RR-1A	RR-1B	RR-2A	RR-2B	RR-3A	RR-3B	RR-4A	RR-4B
Arsenic	6.5	2.2	3.0	4.7	2.2	6.7	5.9	6.5	4.6
Barium	1320	20.5	44.8	34.1	29	211	51.1	37.4	31.5
Cadmium	2	<0.2	0.2	0.3	<0.2	0.2	<0.2	<0.2	<0.2
Chromium	135	14.5	11.5	19.2	15.4	17.1	18.6	16.6	21.4
Chromium VI	3.1	-		<0.1	-	- [	-		<0.1
Lead	220	1.3	3.3	4.1	1.4	17.0	8.8	15.0	7.2
Selenium	1.2	<0.3	1.0	1.3	0.4	<0.3	0.9	<0.3	2.4
Silver	3900	0.2	0.5	0.4	0.4	0.3	0.4	0.5	0.6
Mercury	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

#### **Notes**

- a) Refer to the text of this section and Appendix E for more detail on development of site-specific Method A cleanup levels.
- b) Although the concentration of chromium III was not directly measured, a conservative assumption that 100% of the total chromium was chromium III illustrates that the concentrations of chromium III are well below the MTCA Method A cleanup level of 2,000 mg/kg for chromium III.
- c) The laboratory analyzed chromium VI for each sample with a total chromium result that exceeded 19 mg/kg, the cleanup level for chromium VI identified in WAC 173-340-900, Table 745-1 Method A Soil Cleanup Levels for Industrial Properties.

  Yellow highlight = Result exceeds the MTCA Method A cleanup level.

Blue highlight = Result exceeds natural background level but is below the MTCA Method A cleanup level.

Table 4-4. Analytical Results, BTEX

|        | Soil <sup>a</sup>   | Water <sup>a</sup> |  |  |  |   
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  | S  | ample   
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  |  |   |   |           |           |           |           |
| Matrix | mg/kg   | ug/L               | UST-<br>1B   | UST-<br>2B   | UST-<br>3B   | UST-<br>4B  
  | UST-4B<br>(Dupe)   
  | GS-1A  
   | GS-1A<br>(Dupe)   
   | GS-1B   
  | GS-2A  
  | GS-2B  | SB-1A   
   | SB-1B  | SB-2A  
  | SB-2B  | HL-1A   | HL-1B   | HL-2A     | HL-2B     | HL-3A     | HL-3B     |
| Soil   | 0.03  |                    | -  | ju = 1   | -  | -   
  | -  
  | <0.025   
   | <0.025  
   | <0.025  
  | <0.025   
  | <0.025   | <0.025  
   | <0.025   | <0.025   
  | <0.025   | <0.025  | <0.025  | <0.025    | <0.025    | <0.025    | <0.025    |
| Water  |   | 5                  | <1.0   | <1.0   | <1.0   | <1.0  
  | <1.0   
  | -  
   | -   
   | -   
  | -  
  | -  |   
   | -  | -  
  | -  | -   | -   | - 1       |           | -         | -         |
| Soil   | 6   | -                  | -  | ) (  | -  | -   
  | -  
  | <0.025   
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  | <0.025   | <0.025  
   | <0.025   | <0.025   
  | <0.025   | <0.025  | <0.025  | <0.025    | <0.025    | <0.025    | <0.025    |
| Water  | - I   | 700                | <1.0   | <1.0   | <1.0   | <1.0  
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   | - 1   
   | -   
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  |  |   | - 1   | -         |           | -         | -         |
| Soil   | 0.1   | _                  | -  | -  | -  | -   
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  | <0.025   
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  | <0.025   | <0.025  
   | <0.025   | <0.025   
  | <0.025   | <0.025  | <0.025  | <0.025    | <0.025    | <0.025    | <0.025    |
| Water  | -   | 20                 | <1.0   | <1.0   | <1.0   | <1.0  
  | <1.0   
  | -  
   | -   
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  | -  
  | -  |   
   | -  | -  
  |  | -   |   | -         |           | -         | -         |
| Soil   | 7   |                    | -  |  | -  | -   
  |  
  | <0.025   
   | <0.025  
   | <0.025  
  | <0.025   
  | <0.025   | <0.025  
   | <0.025   | <0.025   
  | <0.025   | <0.025  | <0.025  | <0.025    | <0.025    | <0.025    | <0.025    |
| Water  | -   | 1,000              | <1.0   | <1.0   | <1.0   | <1.0  
  | <1.0   
  | -  
   | H 1   
   |   
  | _  
  | -  | -   
   | -  | -  
  | -  | -   |   | -         | -         | -         | -         |
| Soil   | 9   | -                  | -  |  | -  | -   
  | -  
  | <0.05  
   | <0.05   
   | <0.05   
  | <0.05  
  | <0.05  | <0.05   
   | <0.05  | <0.05  
  | <0.05  | <0.05   | <0.05   | <0.05     | <0.05     | <0.05     | <0.05     |
| Water  | -   | 1,000              | <2.0   | <2.0   | <2.0   | <2.0  
  | <2.0   
  | -  
   | -   
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a) Refer to the text of this section and Appendix E for more detail on development of site-specific Method A cleanup levels.

Yellow highlight = Result exceeds the MTCA Method A cleanup level.

Blue highlight = Result exceeds natural background level but is below the MTCA Method A cleanup level

Acronyms: BTEX = benzene, ethylbenzene, toluene, and xylenes; MTBE = methyl tertiary butyl ether.

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Table 4-5. Analytical Results, PAH and SVOC <sup>a</sup>

SVOC / PAH	Method A Soil Cleanup Level (mg/kg) b	SB-1A	SB-1B	HL-3B	W-3A	W-3B	RR-3A
1-Methylnaphthalene <sup>c</sup>	7.30E+01	0.0033	0.0033	<0.0033	-	-	_
1,2,4-Trichlorobenzene	1.10E+02	-	-	-	<0.083	<0.083	<0.083
1,2-Dichlorobenzene	9.30E+03	-	-	-	<0.083	<0.083	<0.083
1,3-Dichlorobenzene	8.30E-02	-	-	-	<0.083	<0.083	<0.083
1,4-Dichlorobenzene	1.10E+01	-	-	-	<0.083	<0.083	<0.083
2,4,5-Trichlorophenol	8.20E+04	-	-	-	<0.083	<0.083	<0.083
2,4,6-Trichlorophenol	2.10E+02	-	-	-	<0.083	<0.083	<0.083
2,4-Dichlorophenol	2.50E+03	-	-	-	<0.083	<0.083	<0.083
2,4-Dimethylphenol	1.60E+04	-	-	-	<0.083	<0.083	<0.083
2,4-Dinitrophenol	1.60E+03	-	-	-	<0.33	<0.33	<0.33
2,4-Dinitrotoluene	7.40E+00	-	-	-	<0.083	<0.083	<0.083
2,6-Dinitrotoluene	1.50E+00	-	-	-	<0.083	<0.083	<0.083
2-Chloronaphthalene	6.00E+04	-	-	-	<0.083	<0.083	<0.083
2-Chlorophenol	5.80E+03	-	-	-	<0.083	<0.083	<0.083
2-Methylnaphthalene <sup>c</sup>	3.00E+03	0.0033	0.0033	<0.0033	<0.0033	<0.033	<0.033
2-Methylphenol	8.30E-02	-	-	-	<0.083	<0.083	<0.083
2-Nitroaniline	8.00E+03	-	-	-	<0.083	<0.083	<0.083
2-Nitrophenol	8.30E-02	-	-	-	<0.083	<0.083	<0.083
3,3-Dichlorobenzidine	5.10E+00	-	-	-	<0.66	<0.66	<0.66
3-Nitroaniline	8.30E-02	-	-	-	<0.083	<0.083	<0.083
4,6-Dinitro-2-methylphenol	3.30E-01	-	-	-	<0.33	<0.33	<0.33
4-Bromophenyl-phenylether	8.30E-02	-	1	-	<0.083	<0.083	<0.083
4-Chloro-3-methylphenol	8.30E-02	-	-	-	<0.083	<0.083	<0.083
4-Chloroaniline	1.10E+01	-	-	-	<0.083	<0.083	<0.083
4-Chlorophenyl-phenylether	8.30E-02	-	-	-	<0.083	<0.083	<0.083
4-Methylphenol	8.30E-02	-	-	-	<0.083	<0.083	<0.083
4-Nitroaniline	1.10E+02	-	-	-	<0.083	<0.083	<0.083
4-Nitrophenol	8.30E-02	-	-	-	<0.083	<0.083	<0.083
Acenaphthene <sup>c</sup>	4.50E+04	0.0033	0.0033	<0.0033	<0.033	0.04	<0.033
Acenaphthylene <sup>c</sup>	1.00E-01	0.0033	0.0033	<0.0033	<0.033	<0.033	<0.033
Aniline	4.00E+02	-	-	-	<0.33	<0.33	<0.33
Anthracene <sup>c</sup>	2.30E+05	0.0033	0.0033	<0.0033	0.064	0.091	<0.033
Azobenzene	2.60E+01	_		-	<0.083	<0.083	<0.083
Benzidine	1.00E-02	-	-	-	<0.66	<0.66	<0.66

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SVOC / PAH	Method A Soil Cleanup Level (mg/kg) <sup>b</sup>	SB-1A	SB-1B	HL-3B	W-3A	W-3B	RR-3A
Benzo(a)anthracene <sup>c</sup>	2.90E+00	0.0064	0.0033	<0.0033	0.361	0.252	<0.033
Benzo(a)pyrene <sup>c</sup>	2.90E-01	0.0150	0.0033	0.0042	0.377	0.244	<0.033
Benzo(b)fluoranthene <sup>c</sup>	2.90E+00	0.0226	0.0044	0.0116	0.595	0.324	0.06
Benzo(ghi)perylene <sup>c</sup>	1.00E-01	0.0107	0.0033	0.0086	0.194	<0.033	<0.033
Benzo(k)fluoranthene <sup>c</sup>	2.90E+01	0.0121	0.0033	0.0083	0.408	0.262	0.039
Benzoic Acid	3.30E+06	-	-	-	<0.33	<0.33	<0.33
Benzyl Alcohol	8.20E+04				<0.083	<0.083	<0.083
Biphenyl	2.00E+02				<0.083	<0.083	<0.083
bis(3-Chlroethyl)ether	1.00E+00	-	-	-	<0.083	<0.083	<0.083
Butylbenzylphthalate	1.20E+03	-		-	<0.083	<0.083	<0.083
Carbazole	8.3E-02				0.085	0.088	<0.083
Chrysene <sup>c</sup>	2.90E+02	0.0229	0.0054	0.0048	0.444	0.314	0.066
Di-n-butylphthalate	8.20E+04	-	-	-	<0.083	<0.083	<0.083
Di-n-octylphthalate	8.20E+03		-	- 1	<0.083	<0.083	<0.083
Dibenz(a,h)anthracene <sup>c</sup>	2.90E-01	0.0033	0.0033	<0.0033	0.038	<0.033	<0.033
Dibenzofuran	1.00E+03	- 1	- I		<0.083	<0.083	<0.083
Dibenzothiophene	1.20E+04	-	-	-	<0.083	<0.083	<0.083
Diethylphthalate	6.60E+05		-		<0.083	<0.083	<0.083
Dimethylphthalate	8.30E-02		-	-	<0.083	<0.083	<0.083
Fluoranthene <sup>c</sup>	1.00E-01	0.0179	0.0033	0.0045	0.618	0.420	0.056
Fluorene <sup>c</sup>	1.00E-01	0.0033	0.0033	<0.0033	<0.033	<0.033	<0.033
Hexachlorobenzene	9.60E-01	-	-	-	<0.083	<0.083	<0.083
Hexachlorobutadiene	5.30E+00		-	-	<0.083	<0.083	<0.083
Hexachlorocyclopentadiene	7.50E+00		-	-	<0.083	<0.083	<0.083
Hexachloroethane	8.00E+00	- 1	-	-	<0.083	<0.083	<0.083
Indeno(1,3,3-cd)pyrene <sup>c</sup>	2.90E+00	0.0078	0.0033	0.0091	0.236	<0.033	<0.033
Isophorone	2.40E+03	-	-	-	<0.083	<0.083	<0.083
N-Nitroso-di-n-propylamine	3.30E-01		-	- 1	<0.083	<0.083	<0.083
N-Nitrosodiphenylamine	4.70E+02				<0.083	<0.083	<0.083
N-Nitrosodimethylamine	3.40E-02	= - 1	-	-	<0.083	<0.083	<0.083
Naphthalene <sup>c</sup>	5.00E+00	0.0033	0.0033	<0.0033	<0.033	<0.033	<0.033
Nitrobenzene	2.20E+01	-	-	-	<0.083	<0.083	<0.083
Pentachlorophenol	4.00E+00	- 1	b = -	-	<0.083	<0.083	<0.083
Phenanthrene <sup>c</sup>	1.00E-01	0.0082	0.0033	<0.0033	0.384	0.753	<0.033

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SVOC / PAH	Method A Soil Cleanup Level (mg/kg) <sup>b</sup>	SB-1A	SB-1B	HL-3B	W-3A	W-3B	RR-3A
Phenol	2.50E+05		-	-	<0.083	<0.083	<0.083
Pyrene <sup>c</sup>	2.30E+04	0.0138	0.0033	<0.0033	0.745	1.24	0.048
Pyridine	1.20E+03		-		<0.33	<0.33	<0.33
Tetrachlorophenol	2.50E+04		-		<0.083	<0.083	<0.083
Bis(3-Chlroethoxy)Methane	2.50E+03		-		<0.083	<0.083	<0.083
bis(3-Ethylhexyl)Phthalate	1.60E+02		<u>-</u>		0.121	<0.083	<0.083
bis(3-chloroisopropyl)ether	8.30E-02				<0.083	<0.083	<0.083

#### **Notes:**

- a) Results are not presented for the following sampling points, which were non-detect for all PAH compounds: GS-1A (Dupe), GS-1B, GS-2A, GS-2B, SB-2A, SB-2B, HL-1A, HL-1B, HL-2A, HL-2B, and HL-3A. Results are not presented for the following sampling points, which were non-detect for all SVOCs (including PAHs): W-1A, W-1B, W-2A, W-2B, RR-1A, RR-1B, RR-2A, RR-2B, RR-3B, RR-4A, RR-4B. Refer to Appendix G for a similar summary table that includes these sampling locations.
- b) Refer to the text of this section and Appendix E for more detail on development of site-specific Method A cleanup levels.
- c) Compounds included in PAH analysis.

Yellow highlight = Result exceeds the MTCA Method A cleanup level.

Blue highlight = Result exceeds natural background level but is below the MTCA Method A cleanup level

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# 5. CONCLUSIONS AND NEXT STEPS

ERG identified the following conclusions and recommendations based on the data collected during the Phase II ESA.

## **Conclusions - Physical Characteristics**

- 1. The approximate boundaries for the UST south of Building 7 were determined, with some limitations as noted in Section 2.1, Utilities and UST Location. The UST measures between 8 feet and 10 feet in diameter and is 28 feet long and is at a depth starting at 2 feet below ground surface. The approximate volume ranges between 10,500 and 16,500 gallons. Refer to Figure B-1 of Appendix B for an illustration of the UST location.
- 2. The soils at the sampling points consist of mostly sandy loam. Some gravel and clay were detected, but sand dominates the subsurface. A layer of clay with sand below was encountered at varying depths in several borings.
- 3. Groundwater at the UST south of Building 7 was encountered at a depth of about 14 feet. Groundwater was not encountered at the other borings, which were drilled to a depth of about 10 feet. However, moisture was encountered at a depth of 10 feet at the former gas station and the nearby small building. The Crew Chief believes that the groundwater table in those locations is likely near 10 feet.

#### **Conclusions - Chemical Characteristics**

- 4. Prior to collecting each groundwater sample at the UST South of Building 7, the sampling team used water finding paste (Gasoila) to check each bore hole for the presence of floating petroleum products, which were not detected. This check was not performed at other sampling locations because groundwater was not encountered elsewhere.
- 5. One groundwater sample obtained from the UST south of Building 7 was above the natural background levels for TPH DRO (447 mg/L) but below the MTCA Method A cleanup level for TPH DRO (500 mg/L). TPH DRO was not detected in the other three groundwater samples at the UST south of Building 7 and the detection limits were below the MTCA Method A cleanup level.
- 6. BTEX compounds (benzene, toluene, ethylbenzene, xylenes, and MTBA) were not detected in any of the groundwater samples and the detection limits were below the MTCA Method A cleanup levels.
- 7. TPH DRO, TPH gasoline range organics (GRO), BTEX, and polychlorinated biphenyls (PCBs) were not detected in any of the soil samples and the detection limits were below the MTCA Method A cleanup levels.
- 8. Each soil sample had detectable quantities of some of the RCRA 8 metals, but most results were below the MTCA Method A cleanup levels. ERG identified the following conclusions based on the RCRA 8 metals results:
  - Six samples exceeded the site-specific MTCA Method A cleanup level for arsenic (6.5 mg/kg), which was based on the natural background level. The results in excess of the

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MTCA Method A cleanup level were at sampling points SB-1A (16.8 mg/kg), HL-3A (16.2 mg/kg), HL-3B (16.2 mg/kg), W-1A (15.0 mg/kg), W-3A (7.1 mg/kg), and RR-3A (6.7 mg/kg).

- Two samples (GS-2B at the former gas station and SB-1A at the small building near the gas station) exceeded natural background levels for lead (42 and 91 mg/kg) but were below the MTCA Method A cleanup level (220 mg/kg).
- The total chromium results were lower than the MTCA Method A cleanup level for chromium III (2,000 mg/kg) but above the MTCA Method A cleanup level for chromium VI (19 mg/kg). Subsequent analysis for chromium VI confirmed that the chromium VI levels (maximum value of 0.12 mg/kg) were below the MTCA Method A cleanup level.
- Five samples at varying locations and soil depths exceeded the MTCA Method A cleanup level for selenium (0.8 mg/kg). The selenium results for these samples ranged from 1.3 mg/kg to 2.4 mg/kg, which are all lower than EPA's screening level for selenium of 5,800 mg/kg (U.S. EPA, 2015b).
- The levels of arsenic, lead, and selenium pose a low risk to human health during current or future land use activities as the levels are below the human toxicity-based cleanup levels (see Columns H or I in Appendix E, Basis for MTCA Cleanup Limits). The levels of arsenic and lead pose a low risk to wildlife as the levels are below the Terrestrial Ecological Evaluation (TEE) cleanup levels (see Column J in Appendix E, Basis for MTCA Cleanup Limits). The levels of selenium also pose a low risk to wildlife. Although there were eight samples that exceeded the selenium TEE cleanup level of 0.8 mg/kg, all eight sample locations have impervious surfaces (e.g., asphalt paving) and five of the samples are also below a depth of 6 feet. The levels of total chromium, chromium III, and chromium VI pose a low risk to human health as the levels are below the MTCA Method A cleanup levels.
- 9. Six of the 29 soil samples had some detectable results for SVOCs (including PAHs). ERG identified the following conclusions based on the SVOC and PAH results:
  - The soil samples from sampling points W-3A and W-3B (i.e., the two samples from boring W-3) exceeded natural background levels for 11 SVOCs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, carbazole, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.
  - The soil sample from sampling point W-3A exceeded the site-specific MTCA Method A cleanup level for four of the 10 SVOCs identified above: benzo(a)pyrene, benzo(ghi)perylene, carbazole, and fluoranthene. The soil from sampling point W-3B exceeded the site-specific MTCA Method A cleanup level for carbazole and fluoranthene.
  - The levels of SVOCs pose a low risk to human health and wildlife during current or future land use activities as the levels are well below all established human and wildlife toxicity-based cleanup levels (see Columns H, I, or J in Appendix E, Basis for MTCA Cleanup Limits).
- 10. The soil samples were all below EPA's hazardous waste standards for RCRA metals. As the IDW solids drum was a composite of the various sampling locations, ERG concludes that the

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solid drum was also below EPA's hazardous waste standards for RCRA metals. Further, as the majority of the material in the IDW liquids drum was generated by rinsing the sampling equipment, ERG concludes that the IDW liquids drum was also below EPA's hazardous waste standards for RCRA metals.

#### Recommendations

- 1. ERG recommends GSA consider implementing institution controls to minimize exposure to analytes exceeding MTCA Method A cleanup levels for arsenic, selenium and SVOCs. These results include the following sample points: HL-1B (selenium), HL-3A (arsenic), HL-3B (arsenic and selenium), SB-1A (arsenic), W-1A (arsenic), W-3A (arsenic, selenium and SVOCs), W-3B (SVOCs), RR-2A (selenium), RR-3A (arsenic) and RR-4B (selenium). ERG anticipates institutional controls (mitigation) may be appropriate. The MTCA Method A cleanup level for selenium is based on the protection of wildlife. If GSA implements an institutional control to minimize wildlife exposure, the applicable MTCA Method A cleanup level would increase from 1.2 mg/kg to 5,800 mg/kg, which is well in excess of the maximum analytical value (2.4 mg/kg).
- 2. ERG does not recommend any further investigation, monitoring, or mitigation beyond the possible mitigation to address arsenic, selenium or SVOCs (if deemed necessary) as suggested in recommendation 1. Pollutant concentrations exceeding MTCA Method A cleanup levels are isolated to a few areas where no specific sources have been identified and are likely from construction materials or fill that was historically used at the facility.
- 3. ERG recommends GSA maintain a copy of the results related to the UST south of Building 7. These results provide documentation of confirmatory sampling at this location to verify levels of petroleum related constituents are below state requirements for tank closure.
- 4. It is possible that future excavation will uncover unsampled areas that are contaminated. ERG recommends that GSA address schedule and budget-related needs to address this potential when planning any future excavation activities. ERG recommends an in-field survey be conducted during excavation activities at locations found to exceed the MTCA Method A cleanup levels.

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# 6. REFERENCES

- 1. ASTM 2011. American Society for Testing and Materials. *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, Designation E1903-11. July 2011.
- 2. Ecology 1991. Washington Department of Ecology. Publication #90-52 *Guidance for Site Checks and Site Assessments for Underground Storage Tanks.* February 1991.
- 3. Ecology Undated. Washington Department of Ecology. Method NWTPH-*Dx Semivolatile Petroleum Products Method for Soil and Water.* Undated.
- 4. Ecology Undated. Washington Department of Ecology. Method NWTPH-*Gx Volatile Petroleum Products Method for Soil and Water*, Undated.
- 5. Ecology 2005a. Washington Department of Ecology. *Focus on Developing Soil Cleanup Standards Under the Model Toxics Control Act*. April 2005.
- 6. Ecology 2005b. Washington Department of Ecology. *Focus on Developing Ground Water Cleanup Standards Under the Model Toxics Control Act*. April 2005.
- 7. ERG 2015a. Eastern Research Group, Inc. Final Phase I Environmental Site Assessment General Services Administration, 400 15th Street SW, Auburn, Washington. November 20, 2015.
- 8. ERG 2015b. *Quality Management Plan.* December 2015.
- 9. ERG 2016a. *Sampling and Analysis Plan for Phase II ESA, GSA Auburn Complex*, Revision 2. April 13, 2016.
- 10. ERG 2016b. *Health and Safety Plan for Phase II ESA, GSA Auburn Complex,* Revision 1. April 15, 2016.
- 11. GSA 2016. *Performance Work Statement GSA Auburn Complex Phase II Investigation.* Request for Quote. February 12, 2016.
- 12. U.S. EPA1998. U.S. Environmental Protection Agency. *Method 7471B Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)*, SW-846, Revision 2. January 1998.
- 13. U.S. EPA 2001. *EPA Requirements for Quality Assurance Project Plans QA/R-5.* EPA/240/B-01/003.
- 14. U.S. EPA 2001. *EPA Requirements for Quality Management Plans QA/R-2*. EPA/240/B-01/002.
- 15. U.S. EPA 2006. *Method 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry*, SW-846 Update V, Revision 3. August 2006.
- 16. U.S. EPA 2007a. *Method 6020A Inductively Coupled Plasma-Mass Spectrometry*, SW-846, Revision 1. February.

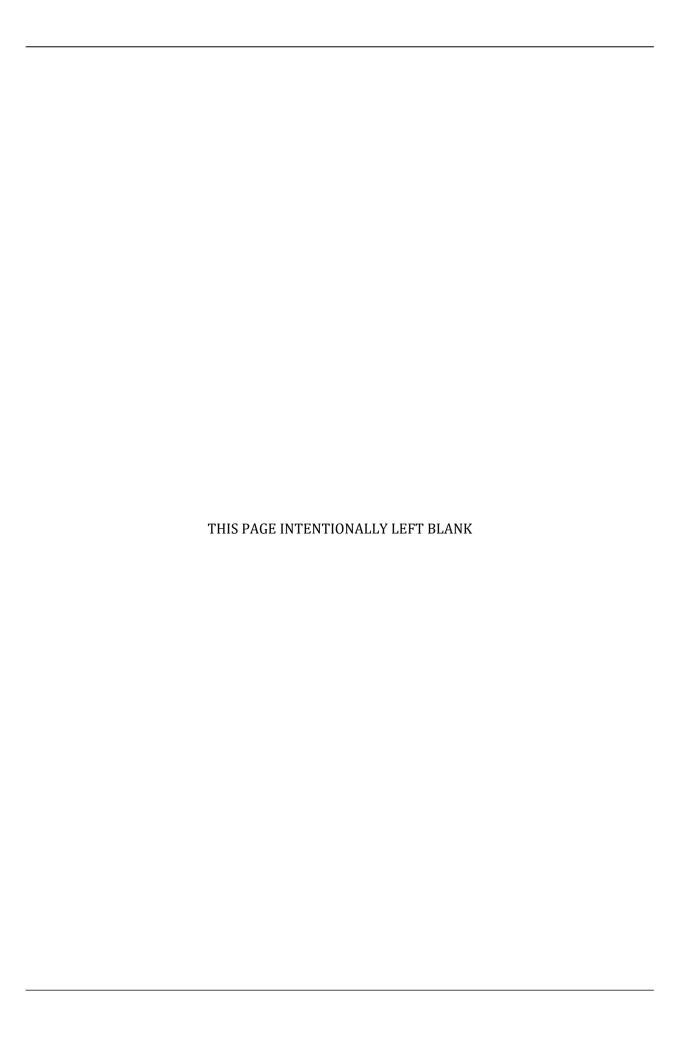
Section: 6 References Revision Number: 0 Revision Date: 6/10/16 Page: 2 of 2

- 17. U.S. EPA 2007b. *Method 8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography,* SW-846 Update V, Revision 1. February 2007.
- 18. U.S. EPA 2014. *Method 8270D Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry*, SW-846 Update V, Revision 5. July.
- 19. U.S. EPA 2015a. Code of Federal Regulations (CFR) Title 40 Part §312 Standards for Conducting All Appropriate Inquiries. 2015.
- 20. U.S. EPA 2015b. EPA nationwide regional screening levels tables ("composite table") downloaded from https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2015.
- 21. Chapter 173-340. Model Toxics Control Act Cleanup. WAC.

Section: Appendix A Revision Number: 0 Revision Date: 6/10/16

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# APPENDIX A SITE MAP



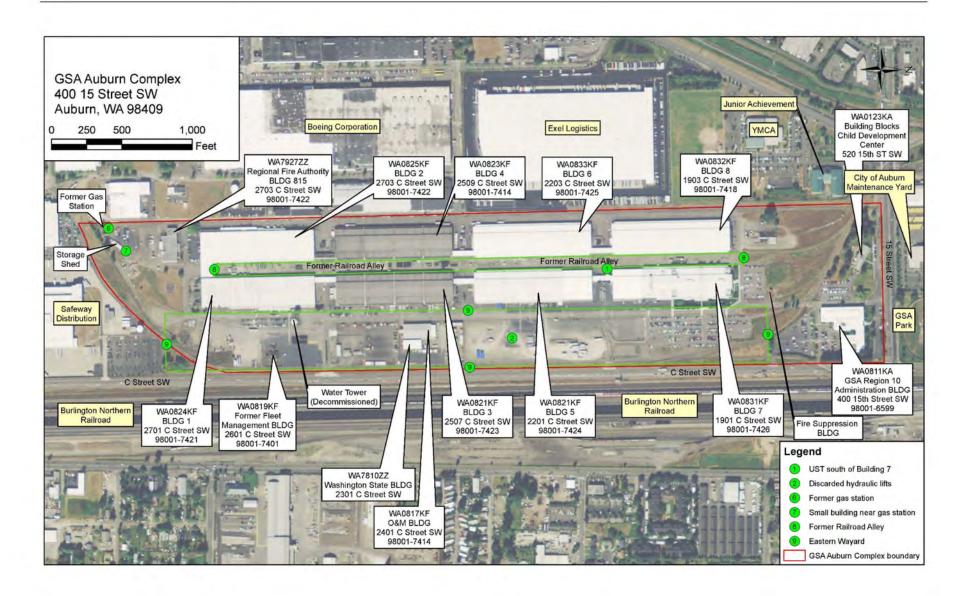
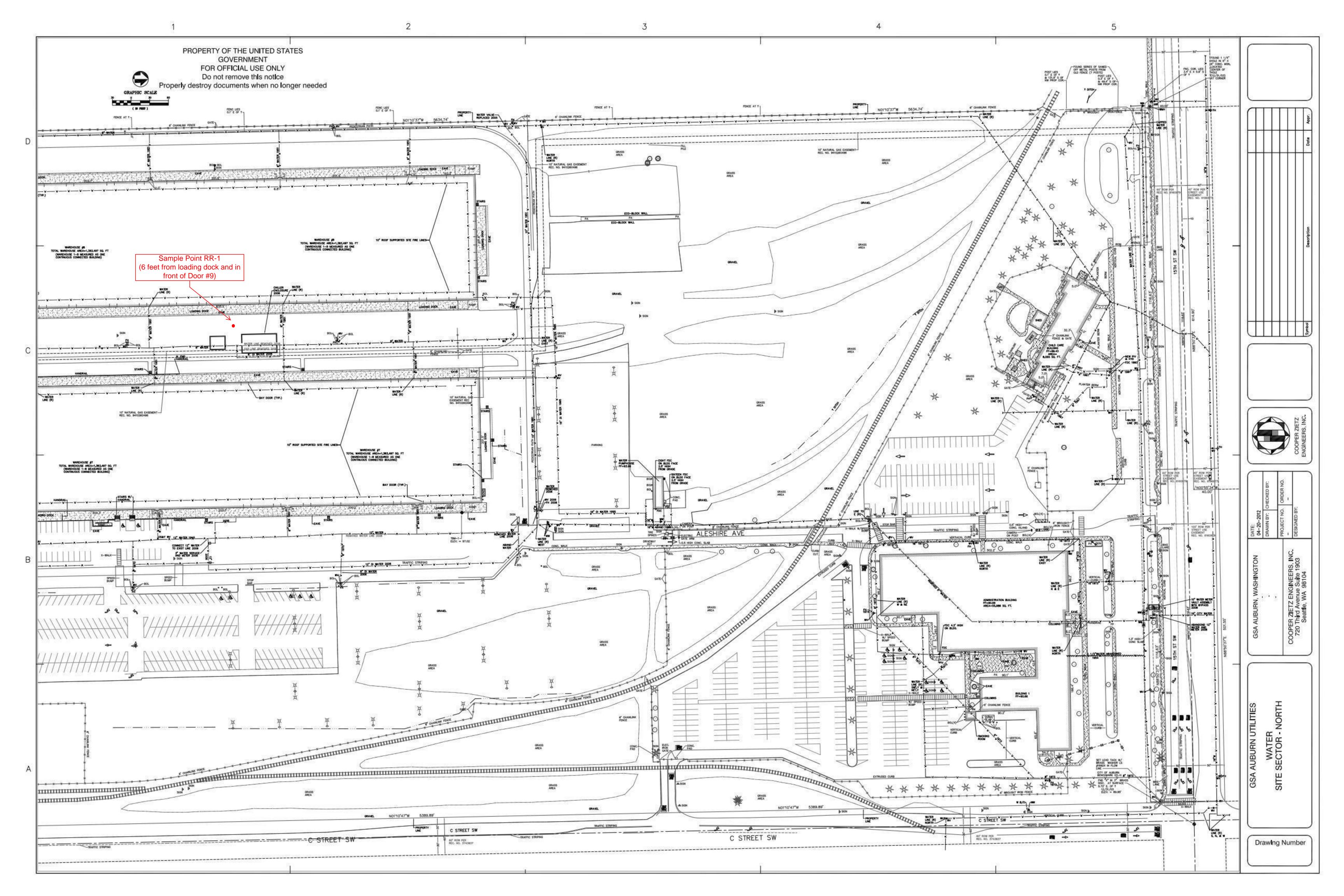


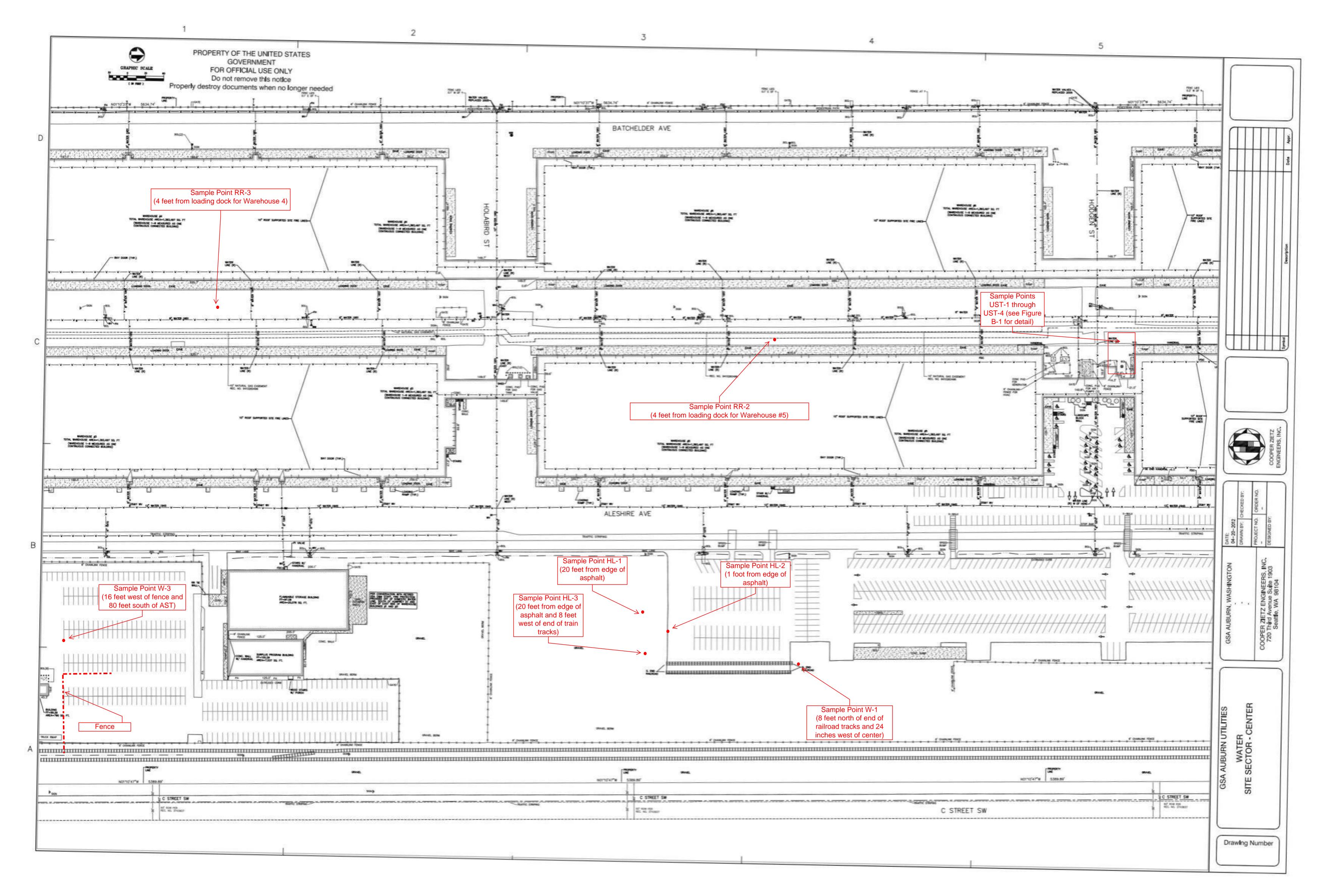
Figure A-1. Site Map

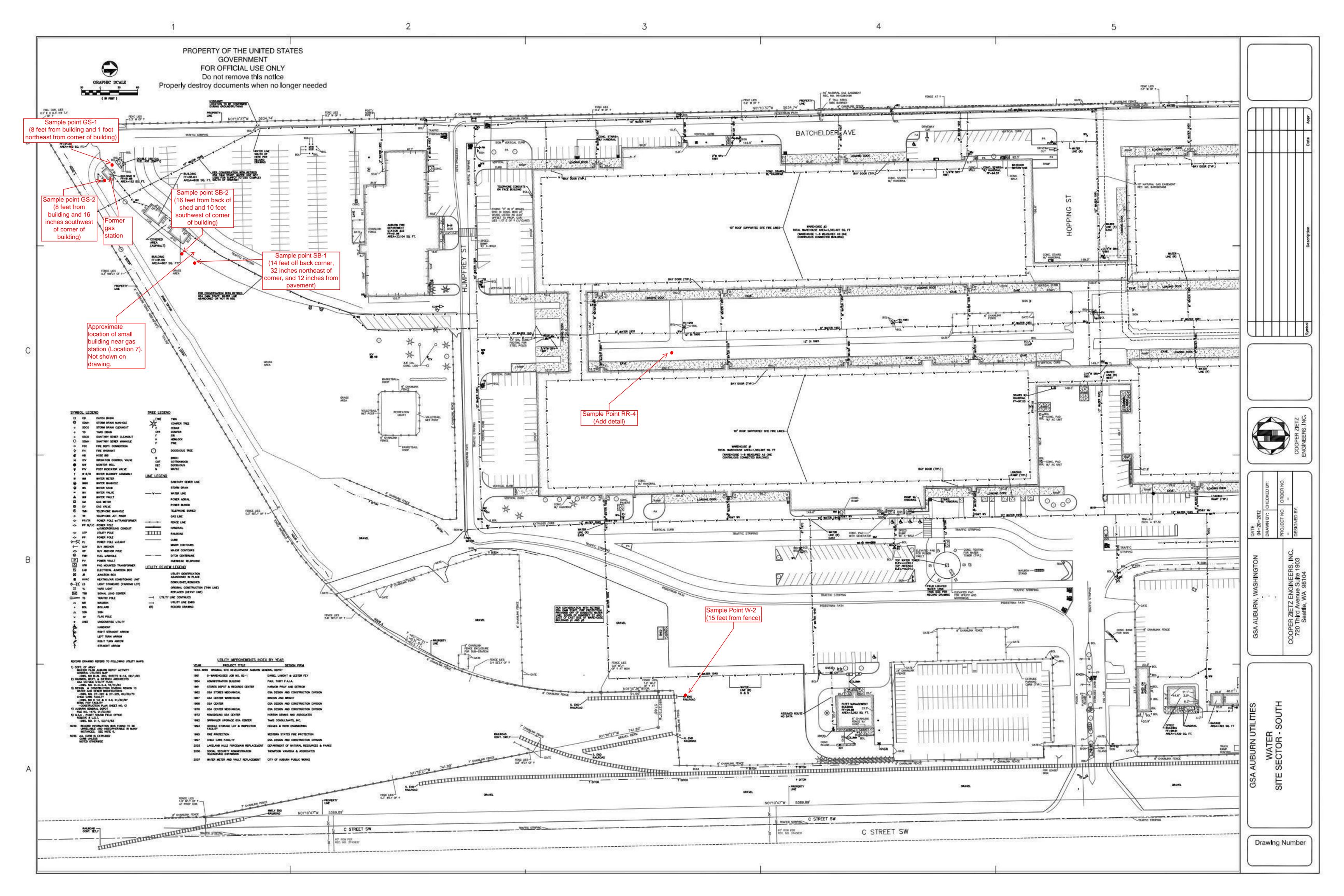


# APPENDIX B SCALED MAPS ILLUSTRATING SAMPLING LOCATIONS









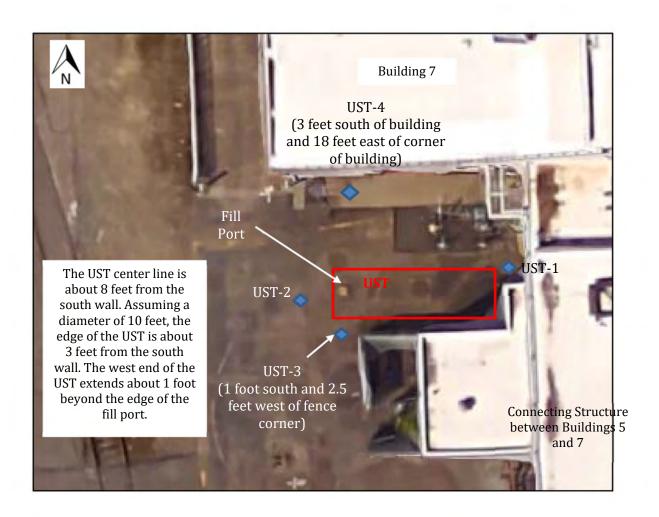


Figure B-1. Aerial View, photo shows actual sampling points at UST south of Building 7 (Location 1)

Section: Appendix C Revision Number: 0 Revision Date: 6/10/16

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# APPENDIX C SOIL BORING LOGS



	Facility:	GSA Auburn Complex	Date/Ti	me: 4/	19116 8
Pr	epared By:	Rachel Star	Latitu	ıde: 47	.298370
Samplin	g Point (#):	HL-IA	Longitu	ide: 12	2.23295
Dept	h to Water:	N/A	Approxin Ground Elevat	ion:	2854.
	pling Point escription:	N/A nydravic lift area	Weat Condition	her ons:	nnyl
Depth	Symbols	Strata Description	USCS Group	PID Reading	Approximate Moisture Content (%)
1'	AS	no dirt wift, gra	U GWSWA	0	
2'	AS	no dirt wift, gra		0	
3	AS		SW	0	
4'	AS	,	SW	0	
2,	AS	V	SM	0	
6!					
9				-	
2					
10'			-		
140	7-12-5				
					-7-
A" = sha	illow sampl ep sample	"S" = soil sample	= groundwa	ter table	in field notes.
	swy	retorin at 2' (no	DAINTWIT	)	
-	-				

	Pachel Star  HL-1B  N/A  hydravicitt  area	Latit Longit Approxir Ground Elevat Wea Conditi	ude: 47 ude: 12	19/16 8 .288370 2.23295 28ft nny/
Sampling Point (#):  Depth to Water:  Sampling Point	HL-1B N/A	Approxir Ground Elevat Wea	nate	2. 23295 28ft
Sampling Point		Ground Elevat Wea	nate tion:	28ft
	hydrauliclift area		ther sv	nny/
Depth Symbols	Strata Description	USCS	PID Reading	Approximate Moisture Content (%)
6 85	grace from 5'-6.5"	GW BOW	0	
7 BS	nuclay, finesondylos		0	
9. BS	7 1	5W	0	
9. BS	/	SW	0	
10' BS	V	SW	0	
otes: Example symbo	ls shown below. If other symbols are u	sed, documen	meaning	in field notes.
"A" = shallow sample "B" = deep sample	"S" = soil sample	7 = groundwa	iter table	
<	emple wilested at 7			

Prepared I Sampling Point ( Depth to Wate Sampling Po Description  Depth Symbo  AS  AS  AS  AS  AS  AS  AS  AS  AS  A	Strata		Grou	Latitu Longitu Approxim nd Elevat Weat Condition  USCS Group  SW SW SW	ide: 4- ide: 12 nate ion: 1	19/16 8 1.29843 2.23 29 8 6 ft  Vny / clear  Approximate Moisture Content (%)
Depth to Water Sampling Por Description  Depth Symbo  AS  AS  AS  AS	T: HL-2A  T: N/A  N/A  Nyaram in  Strata	a Description	Grou	USCS Group	PID Reading	Nny / clear  Approximate Moisture
Depth Symbo  \( \cdot \text{AS} \)  \( \cdot \text{AS} \)	nt nydrau in  Strata	a Description	Grou	USCS Group GW SW	PID Reading	Nny / clear  Approximate Moisture
Depth Symbo  i` AS  2` AS  4` AS	s Strata	a Description	yloon	USCS Group GN SN SN	PID Reading	Approximate Moisture
1' AS 2' AS 3' AS 4' AS	no dirt a	>1 Hi grave	yloun	Group GW SM SW	Reading  O  O	Moisture
2' AS 3' AS 4' AS	no dirt à	the send	yloun	SN SW	0	
3' AS	no day,	fini send	yloan	SW	0	
y' AS				SW		
-		<u> </u>			0	
5' AS		V		SW		
					0	
Notes: Example sy "A" = shallow sar "B" = deep sampl		dwater sample ple	<u> </u>	roundwa		in field notes.

Sampling Point (#):   HL - 2B   Longitude:   122.23256     Depth to Water:   N/A   Approximate Ground Elevation:   186 H     Sampling Point Description:   N/A   Approximate Ground Elevation:   Swny / Clear	Sampling Point (#):   HL - 2B   Longitude:   121-23299		Facility:	GSA Auburn Complex		Date/T	ime: 4/	19/16 8:
Sampling Point (#):   HL-2B   Longitude:   122.23.25	Sampling Point (#):  Depth to Water:    NA	Pı	repared By:	Pachel Stair		Latit		
Depth to Water:   N/A   Ground Elevation:   1864+   Sampling Point   Description:   Nydravia lift   Weather Conditions:   Swmy   Colear	Depth to Water:   N/A   Ground Elevation:   186 ft	Samplin	g Point (#):	HL-2B		Longit		
Depth Symbols Strata Description USCS Group Reading Content (%)    S	Depth Symbols Strata Description    USCS Group   Reading   Reading   Content (%)	Dept	h to Water:	NIA	Gro	Approximund Elevat	nate	
Depth   Symbols   Strata Description   SY   O	Symbols   Strata Description   USCS Group   Reading Content (%)			hydralic lift area				
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample  "S" = soil sample  "S" = soil sample	8: BS 9: BS 10*	Depth					2.000	Moisture
8: BS 9: BS 10:	8: BS 9: BS 10:	6	BS	sometime throughous ho	VH	SW	0	
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	7.	BS	but mostly fine so	ndl			
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample	Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample		BS	1000	n		0	
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample  = groundwater table	Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample					V	0	
"A" = shallow sample "B" = deep sample "S" = soil sample  "GW" = groundwater sample  "S" = soil sample	"A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	10.	BZ	V			O	
"A" = shallow sample "B" = deep sample "S" = soil sample  "GW" = groundwater sample  "S" = soil sample	"A" = shallow sample "GW" = groundwater sample $V$ = groundwater table "S" = soil sample $V$ = groundwater table							
"A" = shallow sample "B" = deep sample "S" = soil sample  "GW" = groundwater sample  "S" = soil sample	"A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	Notes: Ex	ample symb	ools shown below. If other symbols a	re used,	documen	t meaning	in field notes.
		"A" = sha	allow sampl	e "GW" = groundwater sample "S" = soil sample	=	groundwa	iter table	

	Facility:	GSA Auburn Complex		Date/Ti	ime: 4/	191169
P	repared By:	Rachel Stair		Latit	100	1.20842
Samplin	g Point (#):	HL-3A		Longita		2,2325
Dept	h to Water:	NIA		Approxin nd Elevat		8954)4
	pling Point Description:	N/A hydranic lift area		Weat Condition		mny)
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1,	AS	1 Stgravel		GW	0	
2'	AS	noday, fine sand/10	an	5W	O	
31	AS			1	0	
4	AS	1		1	0	
5'	AS	V		V	O	
		ools shown below. If other symbols are	used, d	locument	meaning	in field notes.
	allow sampl ep sample	e "GW" = groundwater sample "S" = soil sample	= g	roundwa	ter table	
		Sample takin a 2	Ft			
					-	

	Facility:	GSA Auburn Complex	- 2	Date/Ti	me: 41	19/16 9:2
Pı	repared By:	pechel stair		Latit	4	7.2884201
Samplin	g Point (#):	HL-3B		Longita		2.232590
Dept	h to Water:	NIA	Grou	Approxinund Elevat	nate	39 54
	pling Point escription:	N/A hydranic lift area		Weat Condition	ther soons:	clear
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
6	85	fine sendy lown	1	SW	0	
7:	B5	u V		25V	VO	
8.	B5	some city		20	- 0	
9	BS	som cial		160	- 0	
10	85	fine souldy loon		SW		
"A" = sha	ample syml allow sampl ep sample	ools shown below. If other symbols  e "GW" = groundwater sample  "S" = soil sample		document	7	in field notes.
		sample taken à	274	+		
		muist soil a				
					-	
						-

	Sampling Point (#):   W -   A   Longitude:   122.2325     Depth to Water:   N/A   Approximate   IS2++     Sampling Point   Description:   Eastern Wayard   Cound Elevation:   Sunny   Clear    Depth   Symbols   Strata Description   Group   Reading   Content (%)	Facility	GSA Auburn Complex	Dat	e/Tim	e: 4/	19/16
Depth to Water:   N/A   Approximate Ground Elevation:   152++   Sampling Point Description:   Eastern Wayard (towner PP)   Weather Conditions:   Sunny/ clear	Depth to Water:   N/A   Approximate   152-ft	Prepared By	Pachel Stair	L	atitud	A. I	
Sampling Point Description:   Fastern Wayard (trumur PP)   Weather Conditions:   Symbols   Strata Description   USCS Group Reading Content (%)	Sampling Point Description:   Fastern Wayard (trumur PP)   Weather Conditions:   Symbols   Strata Description   USCS PID Reading Content (%)	Sampling Point (#)		Lo	igitud		
Depth Symbols Strata Description Group Reading Content (%)  AS GYAM GW O  AS AS NODEMPLOS SW O  STRAIGHT SAND  STRAIGHT SAND  Description Group Reading Content (%)  AS STRAIGHT SAND  SW O  SW	Depth Symbols Strata Description  As Grad Group Reading Moisture Content (%)  As Grad GW O  As As Nodempuss SW O  STRICT SIND SW O  STRICT SIND SW O  STRICT SIND SW O  STRICT SIND SW O  The strict of the symbols are used, document meaning in field notes.  A" = shallow sample "GW" = groundwater sample "S" = soil sample "S" = groundwater table	Depth to Water	NIA			te	
Depth Symbols Strata Description Group Reading Content (%)  AS Grand GW O  AS AS AS Nodemples SW O  STRING STRING SW O	Depth Symbols Strata Description Group Reading Content (%)  AS Grand GW O  AS AS AS Nodemples SW O  STRING STRING SW O  STRING SW O		(torner PP)			s: So	nnyl
2 AS AS Nodempuss SN 0  4 AS Straight send SN 0  5 AS STRAIGH SEND SN 0  otes: Example symbols shown below. If other symbols are used, document meaning in field notes.   A" = shallow sample "GW" = groundwater sample   B" = deep sample "S" = soil sample    = groundwater table	2 As and ample symbols shown below. If other symbols are used, document meaning in field notes.  A" = shallow sample "GW" = groundwater sample "S" = soil sample "S" = groundwater table	Depth Symbols	Strata Description	1000000	The second second	1200	Moisture
This has a straight send of the symbols are used, document meaning in field notes.  A" = shallow sample "GW" = groundwater sample "S" = soil sample "S" = groundwater table	As streight send SW O  S	1' As	gracel	6	N	0	
AS Streight send SW O  S	AS Streight send SW O  S		1	GN	5W	0	
otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample  "S" = groundwater table	otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample  "S" = groundwater table		nodempuss			0	
otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  A" = shallow sample B" = deep sample "S" = soil sample "S" = groundwater table	otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  A" = shallow sample B" = deep sample "S" = soil sample "S" = groundwater table		straight send			0	
otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample = groundwater table	otes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample "S" = groundwater table	5 AS	1	SI	V	0	
"A" = shallow sample "GW" = groundwater sample $S$ " = deep sample "S" = soil sample $S$ " = groundwater table	"A" = shallow sample "GW" = groundwater sample $S$ " = deep sample "S" = soil sample $S$ " = groundwater table						
sample token bothen 2-3ft	Sample token blun 2-3ft	'A" = shallow samp	le "GW" = groundwater sample				in field notes.
			sample taken by	un 2-	34	+	
					-		
				-		-	

	Facility:	GSA Auburn Complex	Date/Ti	me: 4	119/16 9
Pı	repared By:	Rochel Star	Latitu		1.209116
Samplin	g Point (#):	W-1B	Longitu		2.23251
Dept	h to Water:	NIA	Approxim Ground Elevati	iate	52ft
	pling Point Pescription:	(former PR)	Weat Condition	her s	nny /
Depth	Symbols	Strata Description	USCS Group	PID Reading	Approximate Moisture Content (%)
6	BS	graniatintop	GW	0	
7	85	finesalt/loan	SW	0	
3.	35		sw	0	
91	B5	/ Append	SW	0	
101	82	<b>Y</b>	SM	0	

"A" = shallow sample "B" = deep sample	"GW" = groundwater sample "S" = soil sample = groundwater table
	sample from 1/2- 2/5+
-	

	Facility:	GSA Auburn Complex		Date/T		191161
Pi	repared By:	Rochusteir		Latit	ude: 4-	2-2322
Samplin	g Point (#):	W-ZA		Longit	ude: 12	2-2322
Dept	h to Water:	NIA	Grou	Approxin	nate	1254
	pling Point escription:	(Former RP)		Wea Conditi		unny/
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1	AS			SW	0	
2	AS	dry/pandery	SV	VIGW	0	
3		moregrand in ner	L	GW	0	
4	V	sendy 1		GN	0	
5		filmound		GN	0	
'A" = sha	ample symb allow sampl ep sample	ools shown below. If other symbols are  "GW" = groundwater sample  "S" = soil sample  torunct  Sompula - 3 ft	$\nabla$		t meaning	in field notes.

	Facility:	GSA Auburn Complex	Date	/Time:	41	19/16 10
P	repared By:	Rachel Steir	L	titude:		
Samplin	g Point (#):	W-2-13	Lon	gitude	12	2.2322
Dept	h to Water:	NIA	Appro Ground Ele	ximate vation:	1	124
	pling Point Description:	(Former PP)		/eather litions:	SV	nny/
Depth	Symbols	Strata Description	USC Grow		PID ading	Approximate Moisture Content (%)
6	BS	fire send 1100m	SV	~	0	
7:	85	₩	SV	V	0	
6.	BS	gravel Isand	GI	N	0	
9	B5		1		0	
10	BS	•	Ψ.		U	
	7					
"A" = sha	ample symb allow sample ep sample	"S" = soil sample	= ground	lwater		in field notes.
_		sample taken from	7-5+		_	
- 4						
	_				_	

Prepared By:  Sampling Point (#):  Depth to Water:  N/A  Sampling Point Description:  Fasturn Wayard (Formur PP)  USCS  Latitude: 47, 28574  Longitude: 122, 2324  Approximate Ground Elevation:  Weather Conditions:  Clear  Approximat Moisture			GSA Auburn Complex		Date/T	ime: 4/	19116 10
Depth to Water:    Sampling Point   Description:   Castum wayard   Crown PP   Conditions:   Tott	Sampling Po	red By:	Rachy Striv		Latit	ude: 4-	
Sampling Point   Casturn Wayard   Crown Pr   Symbols   Strata Description   USCS   PID   Approximate   Conditions:   Conditions   Con		int (#):	W-3A		Longit		
Depth Symbols Strata Description    AS   AS   AS   AS   AS   AS   AS   A	Depth to	Water:	NIA			nate tion:	7011
Depth Symbols Strata Description Group Reading Content (% AS ASPACE SAND PARAMETERS SYN O			(Former PP)			ther ons:	unny/
otes: Example symbols shown below. If other symbols are used, document meaning in field notes "A" = shallow sample "GW" = groundwater sample "S" = soil sample = groundwater table	Depth Sy	mbols	Strata Description				A STATE OF THE PARTY OF THE PAR
otes: Example symbols shown below. If other symbols are used, document meaning in field notes "A" = shallow sample "GW" = groundwater sample "S" = soil sample = groundwater table			asphalt		_	0	
otes: Example symbols shown below. If other symbols are used, document meaning in field notes "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample = groundwater table		ts	fine send page		SW	0	
otes: Example symbols shown below. If other symbols are used, document meaning in field notes  A" = shallow sample  "GW" = groundwater sample  B" = deep sample  "S" = soil sample			<b>*</b>		1		
otes: Example symbols shown below. If other symbols are used, document meaning in field notes (A" = shallow sample "GW" = groundwater sample (B" = deep sample "S" = soil sample = groundwater table			gravel		GW	0	
A'' = shallow sample $GW'' = groundwater sample$ $S'' = soil sample$ $GW'' = groundwater table$ $GW'' = groundwater table$	2,				GW	0	
'A" = shallow sample "GW" = groundwater sample "S" = soil sample = groundwater table							
simplifixen between 2-3ft	'A" = shallov	v sampl	e "GW" = groundwater sample				in field notes.
			sompletopen between	en 2	-3-51		

Prepared B	y: GSA Auburn Complex		Date/T	ime: 4/	19/16 11		
	Pechal Stair		Latit	ude: 4-	47.285740		
Sampling Point (#	Pechi Steir 1: W-3B		Longit		2.2326		
Depth to Wate	r:	Grou	Approximum Elevat	nate	704		
Sampling Point Description			Wea Conditi	ther sons:	unny/		
Depth Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)		
61 BS	sondy / fine		SM	Ü			
7	/		SW	0			
9.	gravel		GW	O			
	29ft redcolor		SW	0			
WY			SW	0			
otes: Example syr	nbols shown below. If other symbol	s are used,	documen	t meaning	in field notes.		
A" = shallow sam B" = deep sample	"S" = soil sample	<u>V</u> =	groundwa	iter table			
	sempletaken a.	7-844					

	Facility:	GSA Auburn Complex		Date/T	ime: 4	119116 1
Pr	epared By:	Pachy Stair		Latitude:		1.29198
Samplin	g Point (#):	RR-IA		Longit	ude: \2	2.2353
Dept	h to Water:	NA	Gro	Approxinund Elevat		
	pling Point escription:			Weather Conditions:		nny/ lear
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
11	AS	gravel		GN	U	
2		send		SW	0	
3				SW	0	
4.		V		5W	O	
2,		moist day 2 4.5-51	+	ch	0	-
		no GW detect	nd.			
		below				
		net clay la	w			
			,		V	
				-		-
. F		ools shown below. If other symbols a		4	· · · · · · · · · · · ·	in Gold notes
A" = sha	allow sample p sample	그리아 그 아이들이 아니지 않는데 살았다면서 얼마나 아이들이 살아 아니다.	=	groundwa		m nera notes
	-	Sample Foran & L	57	-		

Sampling Point (#):   PP   PB   Longitude:   122.23536     Depth to Water:   Ground Elevation:   149 ft     Depth Symbols   Strata Description   Group Reading   Moisture Content (%)     Depth Symbols   Strata Description   Group Reading   Content (%)     Content (%)   Conte		Facility:	GSA Auburn Complex		Date/Ti	ime: 4	1/19/16 11:		
Depth to Water:   Sampling Point   Description:   Depth Symbols   Strata Description   Strata Description   Symbols   Strata Description   Strata Description   Symbols	Pi	repared By:	Rochal Stair		Latitude:				
Depth to Water:  Sampling Point Description:  Depth Symbols  Strata Description  BS  Sund	Samplin	g Point (#):	PR-1B		Longit				
Depth Symbols Strata Description USCS Group Reading Moisture Content (%)  BS SAND SAND SAND SAND SAND SAND SAND SAN	Dept	h to Water:				nate	and the second s		
Depth Symbols Strata Description Group Reading Content (%)  BS SAND SW CONTENT OF CONTENT OF CONTENT (%)  BS CLY WOOD AT SET OF CU O CU O SWELL O SWEL			Former Railroad Alley				unny/ clear		
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	Depth	Symbols	Strata Description		TANK TO SERVICE AND ADDRESS OF THE PARTY OF	The state of the s	Moisture		
Rotes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample	61	85	send		SW				
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "B" = deep sample "S" = soil sample  "S" = soil sample		BS	cly wood a 7.5 ft	_	-cl	0			
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample "S" = soil sample  = groundwater table	9.	1/2	day		CL	0			
Notes: Example symbols shown below. If other symbols are used, document meaning in field notes.  "A" = shallow sample "GW" = groundwater sample "B" = deep sample  "S" = soil sample			1		CL	0			
"A" = shallow sample "GW" = groundwater sample $S$ " = soil sample $S$ " = groundwater table	10.	1	send	51	News	0			
"A" = shallow sample "GW" = groundwater sample $S$ " = soil sample $S$ " = groundwater table									
	"A" = sha	allow samp	le "GW" = groundwater sample "S" = soil sample	= 1	groundwa				
		_				-			
					-				

Facility:	GSA Auburn Complex		Date/Ti	ime: 4/	19116 12
Prepared By:	Rachy Star		Latit	750-67-74	7.26889
Sampling Point (#):	RR-ZA		Longit		2.23471
Depth to Water:	N/A	Grou	Approxin nd Elevat		
Sampling Point Description:			Weat Condition	ther ons:	nny/ cleer
Depth Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1' AS	gravel		GW	0	
2' AS	send		SW	.D	
3-			1	0	
4.				0	
2,			1	0	
A" = shallow samp B" = deep sample	ools shown below. If other symbols a le "GW" = groundwater sample "S" = soil sample	= g	groundwa		

2 13 - 2 1	GSA Auburn Complex		Date/Ti	ime: 41	19/16 1
Prepared By	: Rachi Star		Latit		
Sampling Point (#)			Longit		2.2347
Depth to Water		Grou	Approxin nd Elevat	nate ion:	11297
Sampling Poin Description			Wea Conditi	ther ons:	nny/ clear
Depth Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
6' BS	sand		SV	0	
7'			-	U	
8.				0	
10.	- N 01		-	0	
10- 1	21 day 29ft		CL	0	7
otes: Example sym A" = shallow samp B" = deep sample	bols shown below. If other symbols a ble "GW" = groundwater sample "S" = soil sample  Sample	<u>_</u> = g	roundwa	meaning ater table	in field notes.

	Facility:	GSA Auburn Complex		Date/Ti	ime: 45	19/16 1
Pr	epared By:	Parky St		Latit		7.28632
Sampling	g Point (#):	PP-3A		Longit	ude: 12	2.2349
Dept	h to Water:	NA	Approximat Ground Elevation		nate	0284
Sam D	pling Point escription:	Former Reitroad Alley		Wea Conditi	ther ons:	mnyl
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
11	AS	sand page		SW	Ö	
2	1	2.5 = Smul layer	1	GW	0	
3-		send/loan	SN	1800	0	
u'	1			3	0	
5.	<b>Y</b>	V	Y	X	0	
otes: Exa	umnle symh	ools shown below. If other symbols ar	e used. d	locument	meaning	in field notes.
'A" = sha	llow sample	그렇게 하지 않는 아니는 이렇게 되었다면 하지 않는데 얼마나 아니라 나는 때 모든데 되었다면 되었다.	$\nabla$		iter table	
		Sample taken boun	2-	3+		

Facility:	GSA Auburn Complex		Date/Ti	me: 4/1	9116 1
Prepared By:	Padri Star		Latitude:		1.28632
ampling Point (#):			Longitu	ide: 12	1.234
Depth to Water:	NIA	Grou	Approxim nd Elevat	ate	102++
Sampling Point Description:	Former Railroad		Weat Condition	her ons:	nny/
Depth Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
6 85	sund		SW	0	
7	1		V	0	
8.	3.5-9" gravel		GW	0	
9'	sind		SW	0	
19.	V		-	0	
otes: Example symb A" = shallow samp B" = deep sample	pols shown below. If other symbols are "GW" = groundwater sample "S" = soil sample  Somple token bto	= g	roundwa		in field notes

	Facility:	GSA Auburn Complex		Date/T	ime: 4/	19/16 1:	
P	repared By:	pachil stajv		Latit	ude: 47	1.283540	
Samplin	g Point (#):			Longit		2.23440	
Dept	h to Water:	NIA	Grou	Approximate Ground Elevation:		6484	
	pling Point escription:			Wea Conditi	ther ons:	sunny/	
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)	
10	AS	send notoem		SW	0		
ン	1				0		
3:		1			0		
4'	1	<b>Y</b>		1	0		
-3			-	Y	0		
A'' = shape	allow sampl ep sample	ools shown below. If other symbols are e "GW" = groundwater sample "S" = soil sample	= E	groundwa		in field notes.	
	0	arripac resort birron					

	Facility:	GSA Auburn Complex		Date/Ti	ime: 4/	9/16 1:5
Pı	repared By:	Eacher Stair		Latit		1.283540
Samplin	g Point (#):			Longita	ude: 12	2.23444
Dept	h to Water:		Grou	Approxinund Elevat	nate	by Ft
	pling Point escription:			Weat Condition	ther ons:	mny/
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
6.	BS	sandnoloum		SM	0	
7.	(			1	0	
8.	1	<b>V</b>		-	0	
9.	-	grand	_	GN	0	
10		·		-		
otes: Ex	ample symb	ools shown below. If other symbols a	re used	document	meaning	in field notes
	allow sampl	이 경기 가장 사람이 살았다. 경기 가장 가장 하는 것이 되었다.				in neid notes.
	ep sample	"S" = soil sample	V = 1	groundwa	ter table	
		sample from 7-8.	4+			
						_
						-

	Facility:	GSA Auburn Complex	ime: 4/	19116 2:		
Prepared By:		Rachel Stair		Latit	2000	
Samplin	g Point (#):	UST-1B		Longita		2, 23467
Dept	h to Water:	14'4"	Gro	Approxinund Elevat	nate	994
	pling Point escription:	USTSOUTHOF Building 7		Weather Conditions		uny!
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1-51		gravel a top		GNISV	NO	
5-10		gravelatop		SW	0	9
015		sand			0	
"A" = sha	ample symb allow sampl ep sample	"S" = soil sample  NO PID Wits	=	document		in field notes.
	X	taking GW sampl			-	relins fro

	Facility:	GSA Auburn Complex		Date/Ti	ime: 4/	20/16/10
Prepa	ared By:	Parky Stair		Latit		7-29047
Sampling Po	oint (#):	VST- ZB		Longita	ude: 12	2.2347
Depth to	Water:	14.621	Grou	Approxin		179
Samplin Desc	ng Point ription:	USTSWAN OF Building 7		Wear Condition		mny/ cleer
Depth Sy	ymbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
0-5		2-5 sand 1-2 gravel		SW	0	
2-10.		homogenous sandy		SVV	0	
10-15		14'-15' net song sondy	SW	0		
Notes: Examp	the second second second	ols shown below. If other symbols are e "GW" = groundwater sample	e used, o	document	meaning	in field notes.
"B" = deep sa	ample	"S" = soil sample	pu			
	PIN	ged Igd of waters	eta	colle	chang	MILISA

# Page: 2 of 2

	Facility:	GSA Auburn Complex		Date/Ti	ime: 4	120/16 1	ZOUD PL
Pı	repared By:	Rachy Stair		Latit	Salar Sa	41. 29045	
Samplin	g Point (#):	•		Longit		22,23472	
Dept	h to Water:	14.46'	Grou	Approxinum Approximatel		944	$\triangleright$
	pling Point escription:	VSTSOLANOF		Wear Conditi		inny/	
		Buildins				COCC V	
Depth	Symbols	Strata Description		USCS Group	PID Readin	Approximate Moisture Content (%)	
1-5		1-2 graves 2-5 sino	(	SW	0		
5-10'		Sandy Soil		SW	0		
10-15'		1-2 graves 2-5 sing sindy soil sundy soil		SM	D		
"A" = sha	ample symb allow sample ep sample	"S" = soil sample	= 1	groundwa	ter table		
		* taking an	39	rple			
	pr	ged I got of water b	2-100	r will	ectiv	sample	ک
	-						
						-	

Facility: Prepared By: Sampling Point (#): Depth to Water:		GSA Auburn Complex		Date/Time:		20/16 80
		VST-4B/4BDUP.	Latitude:  Longitude:  Approximate Ground Elevation:		6 7	1.29037
						2,23471
					nate ion:	156ft
	pling Point escription:	VST South of Building		Weat Condition	ther Sw	cleer
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
-5'		gravel / non	nin	~	_	
5-10'		sundy soil	,	SW	0	
0-15"		more layers of small		GW/SI	NO	
		grin	1			
_						
_						
	-					
		-	4	-		
				-		
				-	-	
otes: Ev	mnle symb	ools shown below. If other symbols are	nsed o	locument	meaning	in field notes
A" = sha	illow sample		<u> </u> = g	roundwa		
	DIAM	d Igal of water bet	10 0	~110=	tio: 1	1111 56
	Ludra					
		took a DUPLICAT	TE O	n th	SON	C
			_		-	-

	Facility:	GSA Auburn Complex	Date	Time:	4/2	0/1/2 2
Pr	epared By:	Pachel Stair	La	titude:		1.28096
Samplin	g Point (#):	SB-IA	Long	gitude:	12	2.23491
Dept	h to Water:	NIA	Approximate Ground Elevation:			3844
	pling Point escription:	Small Building Near Former Gas Station		eather itions:	SI	mny/
Depth	Symbols	Strata Description	USCS		ID ading	Approximate Moisture Content (%)
1	As	sandysoul	SV	)	0	
2	1	1			0	
3.					0	
4	-	V			0	
2					0	_
Intes: Fv	ample symb	ols shown below. If other symbols are	used docume	nt me	ning	in field notes
"A" = sha	illow sample ep sample	"GW" = groundwater sample "S" = soil sample	$\frac{}{2}$ = ground			iii neta notes.
_	54	yple token bins 2	-311	-	-	
					-	

	Facility:	GSA Auburn Complex	1, 11	Date/Ti	ime: 4/	20/16 2
Pr	epared By:	pachy star		Latit	ude: 4	7.20096
Sampling	g Point (#):	5B-1B		Longita	ude: \	12.2349
Depti	to Water:	NIA		Approxin	nate	138th
	pling Point escription:	Former Gas Station		Weat Condition	ther ons:	nny/ cleer
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
6	BS	sondy soil		SW	0	
71	1				0	
8.					U	100
9.	1	N/Z			0	
10,	1	Ψ		V	0	
A" = sha	mple symb llow sample p sample	ols shown below. If other symbols are "GW" = groundwater sample "S" = soil sample	$\nabla$	document	77.79	
D - ucc	p sample		3			
		sample tolan b	tur	17-	443	
	_		_			
				-		

	Facility:	GSA Auburn Complex	Date/T	ime: 4/	20/16 2
Pı	repared By:	Pachel Stair	Latit	10.700	7.280840
Samplin	g Point (#):	5B-2A	Longit		2-23490
Dept	th to Water:	NIA	Approxis Ground Eleva	mate	1984
Sampling Point Description:		Near Former ages station	Wea Condit	ions:	cleer
Depth	Symbols	Strata Description	USCS Group	PID Reading	Approximate Moisture Content (%)
1,	MS	grave +02110	and God	0	
2'	1	grevel to 2'	GW	0	7
3.		scpd	SV	0	
4,	V			0	
5	1	¥	V	0	
"A" = sha	ample symb allow sample ep sample	ools shown below. If other symbols are  "GW" = groundwater sample  "S" = soil sample	used, documen		in field notes.
		sample token	btun 2	-34	+
				-	

USCS PID Moisture	Sampling Point (#): Depth to Water: Sampling Point	SB-2B N/A Smal Building New	Longite Approxin Ground Elevat Wea	ide: 4-	1.2008
Depth to Water:    Sampling Point   Description:   Small Building New   Conditions:   Sunny   Content (%)	Depth to Water: Sampling Point	SB-2B N/A Smal Building New	Approxin Ground Elevat Wea	ude: \2	2.2340
Sampling Point Description:  Symbols  Strata Description  Strata D	Sampling Point	N/A smal Building New	Ground Elevat Wea	CONTRACTOR OF THE PARTY OF THE	
Depth Symbols Strata Description Group Reading Moisture Content (% Symbols Symbols Strata Description Group Reading Content (% Symbols	Sampling Point Description:	smal Building New		ther	
Depth Symbols Strata Description Group Reading Content (% SY CO CONTENT OF THE PROPERTY OF THE		Station	Conditi	ons:	clear
otes: Example symbols shown below. If other symbols are used, document meaning in field note:  A" = shallow sample "GW" = groundwater sample	Depth Symbols	Strata Description		The state of the s	Approximate Moisture Content (%)
otes: Example symbols shown below. If other symbols are used, document meaning in field note:  A" = shallow sample "GW" = groundwater sample	6 85	sindy	SN	O	
otes: Example symbols shown below. If other symbols are used, document meaning in field note:  A" = shallow sample "GW" = groundwater sample	7'	L	1		
tes: Example symbols shown below. If other symbols are used, document meaning in field note:  A" = shallow sample "GW" = groundwater sample		1 clay 1sond	CL		
otes: Example symbols shown below. If other symbols are used, document meaning in field note:  A" = shallow sample "GW" = groundwater sample	91		1	6	
A" = shallow sample "GW" = groundwater sample	10.	V	V	0	
A" = shallow sample "GW" = groundwater sample					
" = shallow sample "GW" = groundwater sample					
hitting water night a lott	A" = shallow sample	"GW" = groundwater sample "S" = soil sample	= groundwa	ter table	

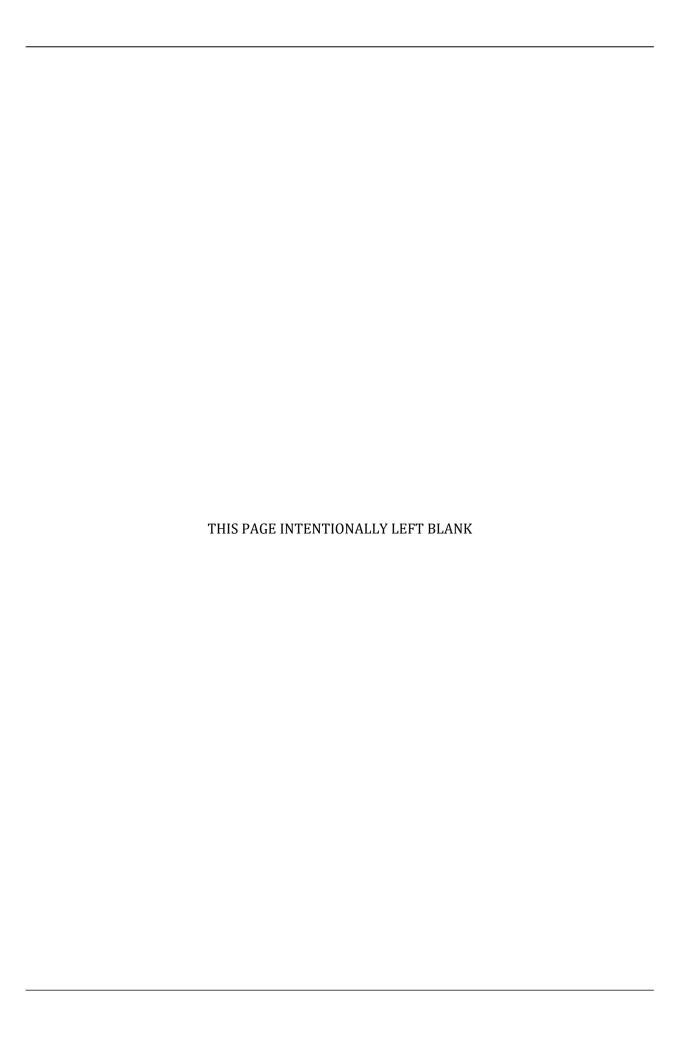
racinty.	GSA Auburn Complex		Date/Ti	me: U	20/16
Prepared By:	Pachel Stail		Latit		7.2806
Sampling Point (#):	GS-IA 1+ DUP		Longitu	ude:   7	2, 2355
Depth to Water:	NIA		proxin i Elevat	nate ion:	15ft
Sampling Point Description:	Former GLS Station		Weat Condition	ther ons:	clear
Depth Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1 45	concrete	-		0	
2	sand		SW	0	}3
3	clay		CL	0	
4	cray		CL	0	
5	sand		SW	0	
otes: Example symb A" = shallow sampl B" = deep sample	ools shown below. If other symbols are  "GW" = groundwater sample  "S" = soil sample	$\nabla = \operatorname{gro}$	undwa	ter table	
	sample town age	via c	W W		

Prepared By:  Sampling Point (#):  Depth to Water:  Sampling Point Description:  Provided State of the second Elevation:  Sampling Point Description:  Sampling Point Description:  Sampling Point Description:  Weather Conditions:  State of the second Elevation:	DESCRIPTION EN	GSA Auburn Complex		Date/Ti	me: 4/-	2011 2
Sampling Point   Description:   Farmer Gros   Strata Description:   Strata Description   St	Prepared By:	Prinistar		Latit		
Depth to Water:    Sampling Point Description:   Farmer Grow Grow Ground Elevation:   Status	Sampling Point (#):	65-18		Longita	ade: 12	2.2355
Depth Symbols Strata Description Group Reading Moisture Content (% Symbols Sym	Depth to Water:	NIA	Gro	Approxinund Elevat		
Depth Symbols Strata Description Group Reading Moisture Content (% Symbols Sym		Former Gras Station				mny)
Strict C  Strict	Depth Symbols	E H I I SESSO				
Solution of the symbols are used, document meaning in field notes:  "A" = shallow sample "GW" = groundwater sample "S" = soil sample "S" = groundwater table  "B" = deep sample "S" = soil sample "S" = groundwater table		sandy lown		SM		
Clay		UN(5")	SN	val,		
otes: Example symbols shown below. If other symbols are used, document meaning in field notes "A" = shallow sample "GW" = groundwater sample "G" = groundwater table		ν		V		
otes: Example symbols shown below. If other symbols are used, document meaning in field notes:  A" = shallow sample  "GW" = groundwater sample  "B" = deep sample  "S" = soil sample	V	clay				
otes: Example symbols shown below. If other symbols are used, document meaning in field notes 'A" = shallow sample "GW" = groundwater sample \[ \sum_{B} = \text{groundwater table} \] = groundwater table	10		200		O	
A'' = shallow sample "GW" = groundwater sample $S'' = soil sample$ = groundwater table						
A" = shallow sample "GW" = groundwater sample $S$ " = deep sample "S" = soil sample $S$ " = groundwater table						
A" = shallow sample $"GW" = groundwater sample B" = deep sample "S" = soil sample  = groundwater table$						
A'' = shallow sample "GW" = groundwater sample $S'' = deep sample$ "S" = soil sample $S'' = groundwater table$						
"A" = shallow sample "GW" = groundwater sample $S$ " = deep sample "S" = soil sample $S$ " = groundwater table	otes: Evample sum	ools shown below If other symbols a	re used	document	meaning	in field notes
Sample told at 1-6 th	A" = shallow samp	e "GW" = groundwater sample "S" = soil sample	=	groundwa	ter table	
						_
water tible is not at 10ff		in the tital ins	nt a	+ 101	4	

	Facility:	GSA Auburn Complex	V	Date/T	ime: 4/	20/16
Pre	pared By:	puncy Striv		Latit		7.280619
Sampling	Point (#):	45-2A		Longit		2,23543
Depth	to Water:	NIA	Grou	Approximately Ap	nate tion:	82ft
	ling Point scription:	Former Gas station		Weather Conditions:		ezft mny/
Depth	Symbols	Strata Description		USCS Group	PID Reading	Approximate Moisture Content (%)
1	AS	) oan		10	0	
2	1	clay		cı	U	
3	4 /				0	
S	V			1	0	
		· · · · · · · · · · · · · · · · · · ·				
				1	3	
	low sample	ols shown below. If other symbols  "GW" = groundwater sample "S" = soil sample	$\overline{}$	document groundwa		in field notes.
		somple taken a	+ 2-7	<b>5</b> ft		

Longi	tude: ੫	7.2806191
	buda.	
Approvi	tuue:	12.23543
Ground Eleva	mate ition:	82fx
	ather tions:	cuer -
uscs Group	PID Reading	Approximate Moisture Content (%)
SC	0	
1		
y a		
y SC	0	
SC	O	
ple $\bigvee_{\overline{z}}$ = groundw	ater table	g in field notes.
		-
/ /mam	westion  USCS Group  SC  SC  SC  Westion  USCS Group  SC  SC  SC  SC  Westion  USCS Group  SC  SC  SC  SC  Westion  USCS Group  SC  SC  SC  SC  Westion  SC  SC  SC  SC  SC  Westion  SC  SC  SC  SC  SC  SC  SC  SC  SC  S	Weather Conditions:  USCS PID Reading  SC O  SC O  SC O  SC O  Wmbols are used, document meaning

# APPENDIX D ANALYTICAL AND QC/QA REPORTS



05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#: 0133.34.002-03

Project: GSA Client ID: HL-1A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:1

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Diesel	<10.0	mg/Kg	NWTPH-D	Benzo(a)Anthracene	<0.0033		
Oil	<50.0	mg/Kg	NWTPH-D	Benzo(a)Pyrene	< 0.0033		
Total Arsenic	2.8	mg/Kg	SW846 6020B	Benzo(b)Fluoranthene	< 0.0033	0 0	
Total Barium	27.4	mg/Kg	SW846 6020B	Benzo(ghi)Perylene	< 0.0033	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	Benzo(k)Fluoranthene	< 0.0033	mg/Kg	
Total Chromium	12.7	mg/Kg	SW846 6020B	Chrysene	< 0.0033	mg/Kg	
Total Lead	1.7	mg/Kg	SW846 6020B	Dibenz(a,h)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Total Selenium	< 0.3	mg/Kg	SW846 6020B	Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Total Silver	1.1	mg/Kg	SW846 6020B	Fluorene	< 0.0033	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	Indeno(1,2,3-cd)Pyrene	< 0.0033	mg/Kg	SW846 8270D
PCB	< 0.01	mg/Kg	SW846 8082A	Naphthalene	< 0.0033	mg/Kg	SW846 8270D
Benzene	< 0.025	mg/Kg	SW846 8260C	Phenanthrene	< 0.0033	mg/Kg	
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C	Pyrene	< 0.0033	mg/Kg	SW846 8270D
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C	0.577			2 11 2 10 2 2 1 1 2
Toluene	< 0.025	mg/Kg	SW846 8260C				
Total Xylenes	< 0.05	mg/Kg	SW846 8260C				
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D				
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D				

PAH's run in SIM mode for lowest reporting limits.

<0.0033 mg/Kg SW846 8270D

<0.0033 mg/Kg SW846 8270D

<0.0033 mg/Kg SW846 8270D

Surrogate	Recovery	Method
Toluene-d8	91	SW846 8260C
4-Bromofluorobenzene	118	SW846 8260C
p-Terphonyl	93	NWTPH-D
Nitrobenzene-dő	71	5W846 8270D
	A SECTION AND DESCRIPTION OF THE PARTY AND ADDRESS OF THE PARTY AND ADD	and a solution of

Surrogate	Recovery	Method
2-Fluorobiphenyl	63	SW846 8270D
p-Terphenyl-d14	81	SW846 8270D
Decachlorobiphenyl	78	SW846 8082A

SPECTRA LABORATORIES

Acenaphthene

Anthracene

Acenaphthylene

2221 Ross Way \* Tacoma, WA 98421 \* (253) 272-4850 \*

Fax (253) 572-9838 • www.spectra-lab.com

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

HL-1B

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:2

Analyte	Result	Units	Method
Diesel	<10.0	mg/Kg	NWTPH-D
Oil	<50.0	mg/Kg	NWTPH-D
Total Arsenic	3.2	mg/Kg	SW846 6020B
Total Barium	23.2	mg/Kg	SW846 6020B
Total Cadmium	0.4	mg/Kg	SW846 6020B
Total Chromium	11.3	mg/Kg	SW846 6020B
Total Lead	1.7	mg/Kg	SW846 6020B
Total Selenium	2.0	mg/Kg	SW846 6020B
Total Silver	1.1	mg/Kg	SW846 6020B
Total Mercury	< 0.05	mg/Kg	SW846 7471B
PCB	< 0.01	mg/Kg	SW846 8082A
Benzene	< 0.025	mg/Kg	SW846 8260C
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Toluene	< 0.025	mg/Kg	SW846 8260C
Total Xylenes	< 0.05	mg/Kg	SW846 8260C
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthylene	< 0.0033	mg/Kg	SW846 8270D
Anthracene	< 0.0033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.0033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Chrysene	< 0.0033	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Fluorene	< 0.0033	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Naphthalene	< 0.0033	mg/Kg	SW846 8270D
Phenanthrene	< 0.0033	mg/Kg	SW846 8270D
Pyrene	< 0.0033	mg/Kg	SW846 8270D

PAH's run in SIM mode for lowest reporting limits.

Surrogate	Recovery	Method
2-Fluorobiphenyl	58	SW846 8270D
4-Bromofluorobenzene	122	SW846 8260C
p-Terphenyl	86	NWTPH-D
Nitrobenzene-d6	57	SW846 8270D
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Surrogate	Recovery	Method
Decachlorobiphenyl	77	SW846 8082A
p-Terphenyl-d14	70	SW846 8270D
Toluene-d8	92	SW846 8260C

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA HL-2A

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:3

Analyte	Result	Units	Method
Diesel	<10.0	mg/Kg	NWTPH-D
Oil	<50.0	mg/Kg	NWTPH-D
Total Arsenic	3.0	mg/Kg	SW846 6020B
Total Barium	30.1	mg/Kg	SW846 6020B
Total Cadmium	0.3	mg/Kg	SW846 6020B
Total Chromium	14.1	mg/Kg	SW846 6020B
Total Lead	2.0	mg/Kg	SW846 6020B
Total Selenium	< 0.3	mg/Kg	SW846 6020B
Total Silver	0.7	mg/Kg	SW846 6020B
Total Mercury	< 0.05	mg/Kg	SW846 7471B
PCB	< 0.01	mg/Kg	SW846 8082A
Benzene	< 0.025	mg/Kg	SW846 8260C
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Toluene	< 0.025	mg/Kg	SW846 8260C
Total Xylenes	< 0.05	mg/Kg	SW846 8260C
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthylene	< 0.0033	mg/Kg	SW846 8270D
Anthracene	< 0.0033	mg/Kg	SW846 8270D
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Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.0033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Chrysene	< 0.0033	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Fluorene	< 0.0033	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Naphthalene	< 0.0033	mg/Kg	SW846 8270D
Phenanthrene	< 0.0033	mg/Kg	SW846 8270D
Pyrene	< 0.0033	mg/Kg	SW846 8270D

PAH's run in SIM mode for lowest reporting limits.

Surrogate	Recovery	Method
2-Fluorobiphenyl	48	SW846 8270D
4-Bromofluorobenzene	125	SW846 8260C
Decachlorobipheny!	74	SW846 8082A
Nitrobenzene-d6	50	SW846 8270D

Surrogate	Recovery	Method
p-Terphenyl	93	NWTPH-D
p-Terphenyl-d14	80	SW846 8270D
Toluene-d8	92	SW846 8260C

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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: HL-2B Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:4

Analyte	Result	Units	Method
Diesel	<10.0	mg/Kg	
Oil	<50.0	mg/Kg	NWTPH-D
Total Arsenic	4.1	mg/Kg	SW846 6020B
Total Barium	29.4	mg/Kg	SW846 6020B
Total Cadmium	< 0.2	mg/Kg	SW846 6020B
Total Chromium	11.9	mg/Kg	SW846 6020B
Total Lead	2.4	mg/Kg	SW846 6020B
Total Selenium	< 0.3	mg/Kg	SW846 6020B
Total Silver	0.7	mg/Kg	SW846 6020B
Total Mercury	< 0.05	mg/Kg	SW846 7471B
PCB	< 0.01	mg/Kg	SW846 8082A
Benzene	< 0.025	mg/Kg	SW846 8260C
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Toluene	< 0.025	mg/Kg	SW846 8260C
Total Xylenes	< 0.05	mg/Kg	SW846 8260C
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthylene	< 0.0033	mg/Kg	SW846 8270D
Anthracene	< 0.0033	mg/Kg	SW846 8270D
		0 -0	

Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.0033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Chrysene	< 0.0033	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Fluoranthene	< 0.0033	mg/Kg	SW846 8270D
Fluorene	< 0.0033	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.0033	mg/Kg	SW846 8270D
Naphthalene	< 0.0033	mg/Kg	SW846 8270D
Phenanthrene	< 0.0033	mg/Kg	SW846 8270D
Pyrene	< 0.0033	mg/Kg	SW846 8270D

PAH's run in SIM mode for lowest reporting limits.

Surrogate	Recovery	Method
2-Fluorobiphenyl	67	SW846 8270D
4-Bromofluorobenzene	119	SW846 8260C
Decachlorobipheny!	80	SW846 8082A
Nitrobenzene-d6	71	SW846 8270D

Surrogate	Recovery	Method
p-Terphenyl	96	NWTPH-D
p-Terphenyl-d14	72	SW846 8270D
Toluene-d8	91	SW846 8260C

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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: HL-3A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:5

Analyte	Result	Units	Method	
Diesel	<10.0	mg/Kg	NWTPH-D	
Oil	<50.0	mg/Kg	NWTPH-D	
Total Arsenic	16.2	mg/Kg	SW846 6020B	
Total Barium	45.9	mg/Kg	SW846 6020B	
Total Cadmium	0.2	mg/Kg	SW846 6020B	
Total Chromium	18.9	mg/Kg	SW846 6020B	
Total Lead	3.2	mg/Kg	SW846 6020B	
Total Selenium	0.5	mg/Kg	SW846 6020B	
Total Silver	0.6	mg/Kg	SW846 6020B	
Total Mercury	< 0.05	mg/Kg	SW846 7471B	
PCB	< 0.01	mg/Kg	SW846 8082A	
Benzene	< 0.025	mg/Kg	SW846 8260C	
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C	
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C	
Toluene	< 0.025	mg/Kg	SW846 8260C	
Total Xylenes	< 0.05	mg/Kg	SW846 8260C	
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D	
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D	
Acenaphthene	< 0.0033	mg/Kg	SW846 8270D	
Acenaphthylene	< 0.0033	mg/Kg	SW846 8270D	
Anthracene	< 0.0033	mg/Kg	SW846 8270D	

Result	Units	Method
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
< 0.0033		SW846 8270D
< 0.0033	-	SW846 8270D
< 0.0033		SW846 8270D
< 0.0033	mg/Kg	SW846 8270D
	<0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033 <0.0033	<0.0033 mg/Kg

PAH's run in SIM mode for lowest reporting limits.

Surrogate	Recovery	Method
2-Fluorobiphenyl	70	SW846 8270D
4-Bromofluorobenzene	121	SW846 8260C
Decachlorobiphenyl	81	SW846 8082A
Nitrobenzene-d6	59	SW846 8270D

Recovery	Method
84	NWTPH-D
81	SW846 8270D
91	SW846 8260C
	84 81

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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA HL-3B

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:6

Analyte	Result	Units	Method
Diesel	<10.0	mg/Kg	NWTPH-D
Oil	<50.0	mg/Kg	NWTPH-D
Total Arsenic	16.2	mg/Kg	SW846 6020B
Total Barium	49.5	mg/Kg	SW846 6020B
Total Cadmium	0.4	mg/Kg	SW846 6020B
Total Chromium	19.3	mg/Kg	SW846 6020B
Total Lead	7.7	mg/Kg	SW846 6020B
Total Selenium	2.4	mg/Kg	SW846 6020B
Total Silver	0.6	mg/Kg	SW846 6020B
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A
Total Mercury	< 0.05	mg/Kg	SW846 7471B
PCB	< 0.01	mg/Kg	SW846 8082A
Benzene	< 0.025	mg/Kg	SW846 8260C
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Toluene	< 0.025	mg/Kg	SW846 8260C
Total Xylenes	< 0.05	mg/Kg	SW846 8260C
1-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
2-Methylnaphthalene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthene	< 0.0033	mg/Kg	SW846 8270D
Acenaphthylene	< 0.0033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Anthracene	< 0.0033	mg/Kg	SW846 8270D
Benzo(a)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	0.0042	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	0.0116	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	0.0086	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	0.0083	mg/Kg	SW846 8270D
Chrysene	0.0048	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.0033	mg/Kg	SW846 8270D
Fluoranthene	0.0045	mg/Kg	SW846 8270D
Fluorene	< 0.0033	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	0.0091	mg/Kg	SW846 8270D
Naphthalene	< 0.0033	mg/Kg	SW846 8270D
Phenanthrene	< 0.0033	mg/Kg	SW846 8270D
Pyrene	< 0.0033	mg/Kg	SW846 8270D

PAH's run in SIM mode for lowest reporting limits.

	Method
63	5W846 8270D
122	SW846 8260C
72	SW846 8082A
65	SW846 8270D
	122 72

Surrogate	Recovery	Method
p-Terphenyl	76	NWTPH-D
p-Terphenyl-d14	.67	SW846 8270D
Toluene-d8	94	SW846 8260C

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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA W-1A

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:7

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	15.0	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	43.4	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	15.7	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Lead	4.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Selenium	1.0	mg/Kg	SW846 6020B	3-Nitroaniline	<0.083	mg/Kg	
Total Silver	0.6	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	<0.33	mg/Kg	
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083		
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	<0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol		mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	<0.083	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	<0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	<0.033	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	<0.33	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D		< 0.033	mg/K.g	SW846 8270D
2-Chloronaphthalene	<0.083			Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chlorophenol		mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
- omerophonor	<0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D

Surrogate	Recovery	Method	Surrogate	Recover	v
2-Fluorophenot	43	SW846 8270D	2,4,6-Tribromophenol	51	SV
Nitrobenzene-d6	51	SW846 8270D			7.
Phenol-d6	49	SW846 8270D	p-Terphenyl-d14	69	SV
2-Fluorobiphenyl	55	SW846 8270D			
SPECTRA LABO	RATORIES				

Method W846 8270D W846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-1A

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:7

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	<0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	<0.083	mg/Kg	
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	me/Ko	SW846 8270D

Surrogate	Recovery	Method
2-Fluorophenol	43	SW846 8270D
Nitrobenzene-dé	51	SW846 8270D
Phenol-d6	49	SW846 8270D
2-Fluorobiphenyl	55	SW846 8270D
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Surrogate	Recovery	Method
2.4.6-Tribromophenol	51	SW846 8270D
p-Terphenyl-d14	69	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#: 0133.34.002-03

Project: GSA Client ID: W-1B Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:8

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	2.9	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	23.2	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	11.5	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
Total Lead	1.5	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	SW846 8270D
Total Selenium	0.8	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Silver	0.5	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	<0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyi-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083		SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	<0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	<0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	<0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083				100000	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083					1000	SW846 8270D
A STATE OF THE PARTY OF THE PAR	<0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	<0.033	mg/Kg mg/Kg	SW846 8270D SW846 8270D
2,6-Dinitrotoluene 2-Chloronaphthalene 2-Chlorophenol	<0.083	mg/Kg mg/Kg mg/Kg	SW846 8270D SW846 8270D SW846 8270D	Azobenzene Benzidine Benzo(a)Anthracene	<0.083 <0.66 <0.033	mg/Kg mg/Kg	SW846 8 SW846 8

Surrogate	Recovery	Method
2.4.6-Tribromophenol	48	SW846 8270D
2-Fhacrobiphenyl	57	5W846 8270D
2-Fluorophenol	44	SW846 8270D
Nitrobenzene-d6	51	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	50	SW846 8270D
p-Terphenyl-d14	72	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-1B

Sample Matrix: Soil

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:8

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	ma/Ka	SW846 8270D

Recovery	Method
48	SW846 8270D
57	SW846 8270D
44	SW846 8270D
51	SW846 8270D
	57 44

Recovery	Method
50	SW846 8270D
72	SW846 8270D
	50

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID: GSA

Sample Matrix: Soil

W-2A

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:9

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	5.5	mg/Kg	SW846 6020B	2-Chlorophenol	< 0.083	mg/Kg	
Total Barium	42.2	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	140 E. 1 (140 R. R. 145).
Total Cadmium	0.2	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Chromium	21.1	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Lead	5.4	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Selenium	< 0.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	SW846 8270D
Total Silver	0.4	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	<0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	<0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083		
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg mg/Kg	SW846 8270D SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	51	SW846 8270D
2-Fluorobiphany!	55	SW846 8270D
2-Fluorophenol	42	SW846 8270D
Nitrobenzene-d6	50	SW846 8270D

Steve	Hibbs,	Laboratory Manager
n14/him		

Surrogate	Recovery	Method
Phanol-d6	48	SW846 8270D
p-Terphenyl-d14	.69	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-2A

Sample Matrix: Soil Date Sampled:

Date Received: 04/19/2016

04/19/2016

Spectra Project: 2016040470

Spectra Number:9

Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobenzene	<0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2.4.6-Tribromophenol	51	SW846 8270D
2-Fluorobiphenyl	55	SW846 8270D
2-Fluorophenol	42	SW846 8270D
Nitrobenzene-dfi	50	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	48	SW846 8270D
p-Terphenyl-d14	69	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-2B

Sample Matrix: Soil

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number: 10

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	5.3	mg/Kg	SW846 6020B	2-Chlorophenol	< 0.083	mg/Kg	
Total Barium	45,2	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	SW846 8270D
Total Chromium	22.3	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Lead	4.6	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
Total Selenium	< 0.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	All the state of the state of the state of
Total Silver	0.4	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	<0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	<0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2.4,6-Tribromophenol	50	SW846 8270D
2-Fluorobiphenyl	50	SW846 8270D
2-Fluorophenol	40	SW846 8270D
Nitrobenzene-d6	45	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	45	SW846 8270D
p-Terphenyl-d14	65	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: W-2B Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 10

		Units	Method
Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	<0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4.6-Tribromophenol	50	SW846 8270D
2-Fluorobiphenyl	50	SW846 8270D
2-Fluorophenol	40	SW846 8270D
Nitrobenzene-d6	45	SW846 8270D
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Surrogate	Recovery	Mediod
Phenol-d6	45	SW846 8270D
p-Terphenyl-d14	65	SW846 8270D

2221 Ross Way \* Tacoma, WA 98421

• (253) 272-4850

Fax (253) 572-9838

www.spectra-lab.com

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA W-3A

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number: 11

Analyte Result Units Method Analyte Result Units Method Total Arsenic 7.1 SW846 6020B mg/Kg 2-Chlorophenol < 0.083 mg/Kg SW846 8270D Total Barium 59.6 mg/Kg SW846 6020B 2-Methylnaphthalene < 0.033 mg/Kg SW846 8270D Total Cadmium < 0.2 mg/Kg SW846 6020B 2-Methylphenol < 0.083 mg/Kg SW846 8270D Total Chromium 21.3 mg/Kg SW846 6020B 2-Nitroaniline < 0.083 mg/Kg SW846 8270D Total Lead 8.4 mg/Kg SW846 6020B 2-Nitrophenol < 0.083 mg/Kg SW846 8270D Total Selenium 1.7 mg/Kg SW846 6020B 3,3-Dichlorobenzidine < 0.66 mg/Kg SW846 8270D Total Silver 0.3 mg/Kg SW846 6020B 3-Nitroaniline < 0.083 mg/Kg SW846 8270D Hexavalent Chromium < 0.1 mg/Kg SW846 7196A 4,6-Dinitro-2-Methylphenol < 0.33 mg/Kg SW846 8270D Total Mercury < 0.05 mg/Kg SW846 7471B 4-Bromophenyl-phenylether < 0.083 mg/Kg SW846 8270D 1,2,4-Trichlorobenzene < 0.083 mg/Kg SW846 8270D 4-Chloro-3-Methylphenol < 0.083 mg/Kg SW846 8270D 1,2-Dichlorobenzene < 0.083 mg/Kg SW846 8270D 4-Chloroaniline < 0.083 SW846 8270D mg/Kg 1,3-Dichlorobenzene < 0.083 mg/Kg SW846 8270D 4-Chlorophenyl-phenylether < 0.083 mg/Kg SW846 8270D 1,4-Dichlorobenzene < 0.083 mg/Kg SW846 8270D 4-Methylphenol < 0.083 mg/Kg SW846 8270D 2,4,5-Trichlorophenol < 0.083 mg/Kg SW846 8270D 4-Nitroaniline < 0.083 mg/Kg SW846 8270D 2,4,6-Trichloropheno! < 0.083 mg/Kg SW846 8270D 4-Nitrophenol < 0.083 mg/Kg SW846 8270D 2,4-Dichlorophenol < 0.083 mg/Kg SW846 8270D Acenaphthene < 0.033 mg/Kg SW846 8270D 2,4-Dimethylphenol < 0.083 mg/Kg SW846 8270D Acenaphthylene < 0.033 mg/Kg SW846 8270D 2,4-Dinitrophenol < 0.33 mg/Kg SW846 8270D Aniline < 0.33 mg/Kg SW846 8270D 2,4-Dinitrotoluene < 0.083 mg/Kg SW846 8270D Anthracene 0.064 mg/Kg SW846 8270D 2,6-Dinitrotoluene < 0.083 mg/Kg SW846 8270D Azobenzene < 0.083 mg/Kg SW846 8270D 2-Chloronaphthalene < 0.083 mg/Kg SW846 8270D Benzidine < 0.66 mg/Kg SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	67	SW846 8270D
2-Pluorobiphenyl	66	SW846 8270D
2-Fluorophenol	53	SW846 8270D
Nitrobenzene-d6	56	SW846 8270D
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Surrogate	Recovery	Mathed
Phenol-d6	57	SW846 8270D
p-Terphenyl-d14	89	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-3A

Sample Matrix: Soil

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:11

Result	Units	Method
0.361	mg/Kg	SW846 8270D
0.377	mg/Kg	SW846 8270D
0.595	mg/Kg	SW846 8270D
0.194	mg/Kg	SW846 8270D
0.408	mg/Kg	SW846 8270D
< 0.33	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
0.085	mg/Kg	SW846 8270D
0.444	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
0.038	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
< 0.083	mg/Kg	SW846 8270D
0.618	mg/Kg	SW846 8270D
<0.033	mg/Kg	SW846 8270D
	0.361 0.377 0.595 0.194 0.408 <0.33 <0.083 <0.083 <0.083 0.085 0.444 <0.083 <0.083 <0.083 <0.083 <0.083	0.361 mg/Kg 0.377 mg/Kg 0.595 mg/Kg 0.194 mg/Kg 0.408 mg/Kg <0.083 mg/Kg <0.083 mg/Kg <0.083 mg/Kg <0.083 mg/Kg <0.083 mg/Kg <0.083 mg/Kg 0.085 mg/Kg 0.085 mg/Kg 0.085 mg/Kg <0.083 mg/Kg

Analyte	Result	Units	Method
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	0.236	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	0.384	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	0.745	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	0.121	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Starrogate	Recovery	Method
2.4.6-Tribromophenol	67	SW846 8270D
2-Fluorobiphenyl	66	SW846 8270D
2-Fluorophenol	53	SW846 8270D
Nitrobenzene-d6	56	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	57	SW846 8270D
p-Terphanyl-d14	89	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-3B

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:12

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	6.4	mg/Kg	SW846 6020B	2-Chlorophenol	< 0.083	mg/Kg	
Total Barium	41.5	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Chromium	21.7	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Lead	6.2	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Selenium	0.8	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Silver	0.2	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	0.040	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	0.091	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
			A. A. S. Charles S. Mar.		-0.00	mg/rg	3 W 040 02 / UD

Surrogate	Resovery	Method
2.4,6-Tribromophenol	110	SW846 8270D
2-Fluorobiphenyl	40	SW846 8270D
2-Fluorophenol	70	SW846 8270D
Nitrobenzene-d6	65	SW846 8270D

Surrogate	Recovery	Method
Phenol-d6	90	SW846 8270D
p-Terphenyl-d14	105	SW846 8270D

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager al4/bjn

Page 17 of 35

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

W-3B

Sample Matrix: Soil

Date Sampled: Date Received: 04/19/2016

04/19/2016

Spectra Project: 2016040470

Spectra Number:12

Analyte	Result	Units	Method
Benzo(a)Anthracene	0.252	mg/Kg	SW846 8270D
Benzo(a)Pyrene	0.244	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	0.324	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	0.262	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	0.088	mg/Kg	SW846 8270D
Chrysene	0.314	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	0.420	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
		1,	

Analyte	Result	Units	Method
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	0.753	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	1.24	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	110	SW846 8270D
2-Fluorobiphenyl	40	SW846 8270D
2-Fluorophenol	70	SW846 8270D
Nitrobenzene-d6	65	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	90	SW846 8270D
p-Terphenyl-d14	105	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: RR-1A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:13

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	2.2	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	20.5	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	14.5	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Lead	1.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Selenium	< 0.3	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	
Total Silver	0.2	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
2-Chlorophenol	< 0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	<0.033	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2.4.6-Tribromophenol	46	SW846 8270D
2-Fluorobiphenyl	52	SW846 8270D
2-Fluorophenol	42	SW846 8270D
Nitrobenzene-d6	48	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	48	SW846 8270D
p-Terphenyl-d14	16	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: RR-1A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 13

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	<0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

46	SW846 8270D
52	SW846 8270D
42	SW846 8270D
48	SW846 8270D
	52 42

Surrogate	Recovery	Mathed
Phenol-d6	48	SW846 8270D
p-Terphenyl-d14	61	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: RR-1B Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 14

495 · 4 · 4	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	3.0	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	44.8	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	SW846 8270D
Total Cadmium	0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	11.5	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
Total Lead	3.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	7-3-7
Total Selenium	1.0	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Silver	0.5	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
2-Chlorophenol	< 0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	48	SW846 8270D
2-FluorobiphenyI	49	SW846 8270D
2-Fluorophenol	39	SW846 8270D
Nitrobenzene-d6	44	SW846 8270D
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Surrogate	Recovery.	Method
Phenol-d6	44	SW846 8270D
p-Terphenyl-d14	59	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#: 0133.34.002-03

Project: GSA Client ID: RR-1B Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 14

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mo/Ko	SW846 8270D

Surrogate	Hecovery	Method
2.4.6-Tribromophenol	48	SW846 8270D
2-Fluorobiphenyl	49	SW846 8270D
2-Fluorophenol	39	SW846 8270D
Nitrobenzene-d6	44	SW846 8270D
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Surrogate	Recovery	Method	
Phenol-d6	44	SW846 8270D	
p-Terphenyl-d14	59	SW846 8270D	

2221 Ross Way \* Tacoma, WA 98421 \* (253) 272-4850 \*

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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

Total Xylenes

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

Trip Blank

Sample Matrix: Water

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Result Units

Method

Spectra Number: 15

Analyte Result Units Method Benzene < 0.025 mg/Kg SW846 8260C Ethylbenzene < 0.025 mg/Kg SW846 8260C Methyl-tert-Butyl Ether < 0.025 mg/Kg SW846 8260C Toluene < 0.025 mg/Kg SW846 8260C

< 0.05

mg/Kg SW846 8260C

Analyte

Sunogate	Recovery	Method
Toluene-d8	92	SW846 8260C
4-Bromofluorobenzene	116	SW846 8260C

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: RR-2A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:16

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	4.7	mg/Kg	SW846 6020B	2-Chlorophenol	< 0.083	mg/Kg	
Total Barium	34.1	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Cadmium	0.3	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Chromium	19.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Lead	4.1	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Selenium	1.3	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	SW846 8270D
Total Silver	0.4	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	<0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	58	SW846 8270D
2-Fluorobiphenyl	61	SW846 8270D
2-Fluorophenol	50	SW846 8270D
Nitrobenzene-d6	55	SW846 8270D
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Surrogate	Recovery	Method	
Phenol-d6	56	SW846 8270D	
p-Terphanyl-d14	72	SW846 8270D	

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA RR-2A

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 16

Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	<0.033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2.4,6-Tribremophenol	58	SW846 8270D
2-Fluorobiphenyl	61	SW846 8270D
2-Fluorophenol	50	SW846 8270D
Nitrohenzene-d6	55	SW846 8270D
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Surrogate	Recovery	Method	
Phenol-d6	56	SW846 8270D	
p-Torphenyl-d14	72	SW846 8270D	

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

RR-2B

Sample Matrix: Soil

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:17

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	2.2	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	29.0	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	15.4	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Lead	1.4	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Sclenium	0.4	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Silver	0.4	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
2-Chlorophenol	<0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2.4.6-Tribrumophenol	55	SW846 8270D
2-Fluorobiphenyl	60	SW846 8270D
2-Fluorophenol	47	SW846 8270D
Nitrobenzene d6	53	SW846 8270D

Surrogate	Recovery	Method
Phenol-d6	53	SW846 8270D
p-Terphenyl-d14	76	SW846 8270D
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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

RR-2B

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:17

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	<0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mo/Ko	SW846 8270D

Surrogate	Recovery	Method
2.4,6-Tribromophenol	55	SW846 8270D
2-Fluorobiphenyl	60	SW846 8270D
2-Fluorophenol	47	SW846 8270D
Nitrobenzene-d6	53	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	53	SW846 8270D
p-Terphenyl-d14	76	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: GSA Client ID: RR-3A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number: 18

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	6.7	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	211	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	17.1	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Lead	17.0	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Selenium	< 0.3	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	
Total Silver	0.3	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	<0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	<0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66		
2-Chlorophenol	<0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	< 0.033	mg/Kg mg/Kg	SW846 8270D SW846 8270D

Surrogate	Recovery	Method	
2.4,6-Tribromophenol	62	SW846 8270D	
2-Fluorobiphenyl	60	SW846 8270D	
2-Fluorophenot	48	SW846 8270D	
Nitrobenzene-dó	54	SW846 8270D	

Sarrogatu	Recovery	Method	
Phenol-d6	54	SW846 8270D	
p-Terphenyl-d14	72	SW846 8270D	

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA

RR-3A

Sample Matrix: Soil

Date Sampled:

04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:18

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	0.060	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	0.039	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	0.066	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	0.056	mg/Kg	SW846 8270D
Fluorene	< 0.033	me/Ke	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nítroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-mitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	0.048	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	me/Ke	SW846 8270D

Surrogate	Recovery	Method
2.4,6-Tribromophenol	62	SW846 8270D
2-Fluorobiphenyl	60	SW846 8270D
2-Fluorophenol	48	SW846 8270D
Nitrobenzene-d6	54	SW846 8270D
OBECOMD L T LEGA		

< 0.083

SW846 8270D

Surrogate	Recovery	Method	
Phenol-d6	54	SW846 8270D	
p-Terphenyl-d14	72	SW846 8270D	

SPECTRA LABORATORIES

Hexachlorobenzene

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project: Client ID:

GSA RR-3B

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:19

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	5.9	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	
Total Barium	51.1	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	
Total Chromium	18.6	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	
Total Lead	8.8	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	
Total Selenium	0.9	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Silver	0.4	mg/Kg	SW846 6020B	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	< 0.66	mg/Kg	SW846 8270D
2-Chlorophenol	<0.083	mg/Kg	SW846 8270D	Benzo(a)Anthracene	<0.033	mg/Kg	SW846 8270D SW846 8270D

	Method	Surrogate	Recovery	Method
52	SW846 8270D	Phonol-d6	44	SW846 8270D
51	SW846 8270D	p-Terphenyl-d14		SW846 8270D
40	SW846 8270D		90	311043 02.7013
44	SW846 8270D			
	51 40	51 SW846 8270D 40 SW846 8270D	51 SW846 8270D p-Terphenyl-d14 40 SW846 8270D	52 SW846 8270D Phenol-d6 44 51 SW846 8270D p-Terphenyl-d14 65 40 SW846 8270D

Steve Hibbs, Laboratory Manager al4/bjn

Page 30 of 35

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID:

RR-3B

Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016

Spectra Project: 2016040470

Spectra Number:19

Analyte	Result	Units	Method
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mo/Ko	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	52	SW846 8270D
2-Fluorobiphenyl	51	SW846 8270D
2-Fluorophenol	40	SW846 8270D
Nitrobenzene-d6	44	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	44	SW846 8270D
p-Terphenyl-d14	65	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133.34.002-03

Project:

GSA

Client ID: RR-4A Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:20

Analyte	Result	Units	Method	
Total Arsenic	6.5	mg/Kg	SW846 6020B	
Total Barium	37.4	mg/Kg	SW846 6020B	
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	
Total Chromium	16.6	mg/Kg	SW846 6020B	
Total Lead	15.0	mg/Kg	SW846 6020B	
Total Selenium	< 0.3	mg/Kg	SW846 6020B	
Total Silver	0.5	mg/Kg	SW846 6020B	
Total Mercury	< 0.05	mg/Kg	SW846 7471B	
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	
2-Chlorophenol	< 0.083	mg/Kg	SW846 8270D	

Analyte	Result	Units	Method
2-Methylnaphthalene	< 0.033	mg/Kg	
2-Methylphenol	< 0.083	mg/Kg	
2-Nitroaniline	< 0.083	mg/Kg	
2-Nitrophenol	< 0.083	mg/Kg	
3,3-Dichlorobenzidine	< 0.66	mg/Kg	SW846 8270D
3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
Acenaphthene	< 0.033	mg/Kg	SW846 8270D
Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
Aniline	< 0.33	mg/Kg	SW846 8270D
Anthracene	< 0.033	mg/Kg	SW846 8270D
Azobenzene	< 0.083	mg/Kg	SW846 8270D
Benzidine	< 0.66	mg/Kg	SW846 8270D
Benzo(a)Anthracene	< 0.033	mo/K o	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenoi	.51	SW846 8270D
2-Fluorobiphenyl	52	SW846 8270D
2-Fluorophenol	43	SW846 8270D
Nitrobenzene-d6	48	SW846 8270D
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Surrogate	Recovery	Method
Phenol-d6	47	SW846 8270D
p-Terphenyl-d14	60	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#: 0133.34.002-03

Project: GSA Client ID: RR-4A Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:20

Analyte	Result	Units	Method	Analyte	R
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D	Hexachlorobutadiene	ī
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D	Hexachlorocyclopentadiene	
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D	Hexachloroethane	
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D	Indeno(1,2,3-cd)Pyrene	
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D	Isophorone	
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D	N-Nitroso-Di-n-Propylamine	
Biphenyl	< 0.083	mg/Kg	SW846 8270D	N-Nitrosodiphenylamine	
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D	N-nitrosodimethylamine	
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D	Naphthalene	
Carbazole	< 0.083	mg/Kg	SW846 8270D	Nitrobenzene	
Chrysene	< 0.033	mg/Kg	SW846 8270D	Pentachlorophenol	
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D	Phenanthrene	
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D	Phenol	
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D	Pyrene	
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D	Pyridine	
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D	Tetrachlorophenol	1
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D	bis(2-Chloroethoxy)Methane	
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D	bis(2-Ethylhexyl)Phthalate	4
Fluoranthene	< 0.033	mg/Kg	SW846 8270D	bis(2-chloroisopropyl)Ether	
Fluorene	< 0.033	mg/Kg	SW846 8270D	A STATE OF THE STA	
Hexachlorobenzene	< 0.083	mg/Kg	SW846 8270D		

Analyte	Result	Units	Method
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/Kg	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4.6-Tribromopheriol	51	SW846 8270D
2-Pluorobiphenyi	52	SW846 8270D
2-Fluorophenol	43	SW846 8270D
Nitrobenzene-d6	48	SW846 8270D
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Surrounte	Recovery	Method
Phanol-dó	47	SW846 8270D
p-Terphenyl-d14	60	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#: 0133.34.002-03

Project: GSA RR-4B Client ID: Sample Matrix: Soil

Date Sampled: 04/19/2016 Date Received: 04/19/2016 Spectra Project: 2016040470

Spectra Number:21

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Total Arsenic	4.6	mg/Kg	SW846 6020B	2-Chlorophenol	<0.083	mg/Kg	SW846 8270D
Total Barium	31.5	mg/Kg	SW846 6020B	2-Methylnaphthalene	< 0.033	mg/Kg	SW846 8270D
Total Cadmium	< 0.2	mg/Kg	SW846 6020B	2-Methylphenol	< 0.083	mg/Kg	SW846 8270D
Total Chromium	21.4	mg/Kg	SW846 6020B	2-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Total Lead	7.2	mg/Kg	SW846 6020B	2-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
Total Selenium	2.4	mg/Kg	SW846 6020B	3,3-Dichlorobenzidine	< 0.66	mg/Kg	SW846 8270D
Total Silver	0.6	mg/Kg	SW846 6020B	3-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A	4,6-Dinitro-2-Methylphenol	< 0.33	mg/Kg	SW846 8270D
Total Mercury	< 0.05	mg/Kg	SW846 7471B	4-Bromophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,2,4-Trichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloro-3-Methylphenol	< 0.083	mg/Kg	SW846 8270D
1,2-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chloroaniline	< 0.083	mg/Kg	SW846 8270D
1,3-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Chlorophenyl-phenylether	< 0.083	mg/Kg	SW846 8270D
1,4-Dichlorobenzene	< 0.083	mg/Kg	SW846 8270D	4-Methylphenol	< 0.083	mg/Kg	SW846 8270D
2,4,5-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitroaniline	< 0.083	mg/Kg	SW846 8270D
2,4,6-Trichlorophenol	< 0.083	mg/Kg	SW846 8270D	4-Nitrophenol	< 0.083	mg/Kg	SW846 8270D
2,4-Dichlorophenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthene	< 0.033	mg/Kg	SW846 8270D
2,4-Dimethylphenol	< 0.083	mg/Kg	SW846 8270D	Acenaphthylene	< 0.033	mg/Kg	SW846 8270D
2,4-Dinitrophenol	< 0.33	mg/Kg	SW846 8270D	Aniline	< 0.33	mg/Kg	SW846 8270D
2,4-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Anthracene	< 0.033	mg/Kg	SW846 8270D
2,6-Dinitrotoluene	< 0.083	mg/Kg	SW846 8270D	Azobenzene	< 0.083	mg/Kg	SW846 8270D
2-Chloronaphthalene	< 0.083	mg/Kg	SW846 8270D	Benzidine	<0.66	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	61	SW846 8270D
2-Fluorobiphenyl	63	SW846 8270D
2-Fluorophenol	51	SW846 8270D
Nitrobenzene-d6	55	SW846 8270D

55	SW846 8270D
69	SW846 8270D

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Attn: Mark Briggs

P.O.#:

0133,34,002-03

Project:

GSA

Client ID:

RR-4B

Sample Matrix: Soil

Date Sampled: 04/19/2016

Date Received: 04/19/2016

Spectra Project: 2016040470 Spectra Number:21

Analyte	Result	Units	Method
Benzo(a)Anthracene	< 0.033	mg/Kg	SW846 8270D
Benzo(a)Pyrene	< 0.033	mg/Kg	SW846 8270D
Benzo(b)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzo(ghi)Perylene	< 0.033	mg/Kg	SW846 8270D
Benzo(k)Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Benzoic Acid	< 0.33	mg/Kg	SW846 8270D
Benzyl Alcohol	< 0.083	mg/Kg	SW846 8270D
Biphenyl	< 0.083	mg/Kg	SW846 8270D
Bis(2-Chloroethyl)Ether	< 0.083	mg/Kg	SW846 8270D
Butylbenzylphthalate	< 0.083	mg/Kg	SW846 8270D
Carbazole	< 0.083	mg/Kg	SW846 8270D
Chrysene	< 0.033	mg/Kg	SW846 8270D
Di-n-Butylphthalate	< 0.083	mg/Kg	SW846 8270D
Di-n-Octyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Dibenz(a,h)Anthracene	< 0.033	mg/Kg	SW846 8270D
Dibenzofuran	< 0.083	mg/Kg	SW846 8270D
Dibenzothiophene	< 0.083	mg/Kg	SW846 8270D
Diethylphthalate	< 0.083	mg/Kg	SW846 8270D
Dimethyl Phthalate	< 0.083	mg/Kg	SW846 8270D
Fluoranthene	< 0.033	mg/Kg	SW846 8270D
Fluorene	< 0.033	mg/Kg	SW846 8270D

Analyte	Result	Units	Method
Hexachlorobenzene	<0.083	mg/Kg	SW846 8270D
Hexachlorobutadiene	< 0.083	mg/Kg	SW846 8270D
Hexachlorocyclopentadiene	< 0.083	mg/Kg	SW846 8270D
Hexachloroethane	< 0.083	mg/Kg	SW846 8270D
Indeno(1,2,3-cd)Pyrene	< 0.033	mg/Kg	SW846 8270D
Isophorone	< 0.083	mg/Kg	SW846 8270D
N-Nitroso-Di-n-Propylamine	< 0.083	mg/K.g	SW846 8270D
N-Nitrosodiphenylamine	< 0.083	mg/Kg	SW846 8270D
N-nitrosodimethylamine	< 0.083	mg/Kg	SW846 8270D
Naphthalene	< 0.033	mg/Kg	SW846 8270D
Nitrobenzene	< 0.083	mg/Kg	SW846 8270D
Pentachlorophenol	< 0.083	mg/Kg	SW846 8270D
Phenanthrene	< 0.033	mg/Kg	SW846 8270D
Phenol	< 0.083	mg/Kg	SW846 8270D
Pyrene	< 0.033	mg/Kg	SW846 8270D
Pyridine	< 0.33	mg/Kg	SW846 8270D
Tetrachlorophenol	< 0.083	mg/Kg	SW846 8270D
bis(2-Chloroethoxy)Methane	< 0.083	mg/Kg	SW846 8270D
bis(2-Ethylhexyl)Phthalate	< 0.083	mg/Kg	SW846 8270D
bis(2-chloroisopropyl)Ether	< 0.083	mg/Kg	SW846 8270D

Surrogate	Recovery	Method
2,4,6-Tribromophenol	61	SW846 8270D
2-Fluorobiphenyl	63	SW845 8270D
2-Fluorophenol	51	SW846 8270D
Nitrobenzeae-d6	55	SW846 8270D
CDECTO A T ADOD	ATORTEC	

Surrogate	Recovery	Method
Phenol-d6	55	SW846 8270D
p-Terphenyl-d14	69	SW846 8270D

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May 17, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151

Units:

mg/Kg

Spectra Project:

2016040470

Applies to Spectra #'s 5,9,10,11,12,16,21

### QUALITY CONTROL RESULTS

	avalent Chromium in Soil	Method Blank			
Date Extracted:	5/17/2016	Date Analyzed:		yzed:	5/17/2016
	Hevaval	ent Chromium	Method B < 0.1	lank	
		lank Spike (LCS			
Date Extracted:	5/17/2016	Diam's opinic (DCS)		yzed:	5/17/2016
		Spike	LCS	LCS	
		Added	Conc.	%Rec	
	Hexavalent Chromi	ium 1.00	0.980	98.0	
.CS Recovery lim	its 80-120%				
	Blank Sp	oike Duplicate (I	CSdup)		

Date Extracted: 5/17/16

Date Analyzed:

5/17/2016

Spike LCS

Added 1.00

Conc. 0.910

%Rec 91.0

LCS

RPD: 7.4

Hexavalent Chromium

LCS Recovery limits 80-120%

RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs

Laboratory Manager

<sup>\*\*</sup>Due to color interferences caused by the sample, the matrix spike and matrix spike duplicate were diluted out of the sample.

April 28, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Sample Matrix:

Soil

EPA Method: SW-846 8260-C Spiked Sample: 2016040470-6

Date Analyzed:

4/22/2016

Units:

mg/Kg

Spectra Project: 2016040470

Applies to: #1-6

#### BTEX by Method 8260-Methanolic Extraction Blank Spike/ Spike Duplicate Results

COMPOUND	SAMPLE	SPIKE	SPIKE	% REC	DUP RESULT	DUP %REC	RPD
Benzene	<0.025	0.50	0.580	116	0.512	102	12.5
Toluene	<0.025	0.50	0.476	95	0.448	90	6.2
Ethylbenzene	<0.025	0.50	0.478	96	0.450	90	6.0
m,p-Xylenes	<0.05	1.00	0.956	96	0.919	92	3.9
o-Xylenes	<0.025	0.50	0.531	106	0.484	97	9.3
MTBE  * out of limits	<0.025	0.50	0.564	113	0.527	105	6.7

Sample results listed are on a wet weight basis for calculation purposes.

Surrogates		MS	MSD	MB	Method Blank	mg/Kg
	Dibromofluoromethane	118	121	120	Benzene	< 0.025
	1,2-Dichloroethane-d4	128	131	132	Toluene	< 0.025
	Toluene-d8	94	94	92	Ethyl Benzene	< 0.025
	4-Bromofluorobenzene	122	125	121	Total Xylenes	< 0.05
	V = 500000000000000000000000000000000000	777			MTBE	< 0.025

Spectra Laboratories, Inc.

April 27, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Laboratory Control Sample (LCS)

Project: GSA Sample matrix: Soil Spectra Project: Method 8270/SIM

2016040470

Date Extracted: Date Analyzed: Apples to Samples: < = less than

04/21/16 04/21/16 #1-6

Method Blank

#### POLYNUCLEAR AROMATIC HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

	True	LCS		
Compound	Value, ng/ml	Result	% Rec	Blank Result, mg/Kg
Naphthalene	250	208	83	< 0.0033
2-Methylnaphthalene	250	240	96	< 0.0033
I-Methylnaphthalene	250	184	74	< 0.0033
cenaphthylene	250	134	54	< 0.0033
cenaphthene	250	170	68	< 0.0033
luorene	250	172	69	< 0.0033
henanthrene	250	194	78	<0.0033
Anthracene	250	158	63	< 0.0033
luoranthene	250	209	84	< 0.0033
yrene	250	160	64	< 0.0033
Benzo(a)Anthracene	250	212	85	< 0.0033
Chrysene	250	173	69	< 0.0033
Benzo(b)Fluoranthene	250	248	99	< 0.0033
Benzo(k)Fluoranthene	250	234	94	< 0.0033
Benzo(a)Pyrene	250	189	76	< 0.0033
ndeno(1,2,3-cd)Pyrene	250	217	87	< 0.0033
Dibenzo(a,h)Anthracene	250	208	83	<0.0033
Benzo(g,h,l)Perylene	250	169	68	<0.0033
SURROGATE RECOVERIES			% Rec	% Rec
Nitrobenzene-d5			66	75
2-Fluorobiphenyl			58	76
p-Terphenyl-d14			64	99

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Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Project: GSA

Sample matrix: Soil

Spectra Project: 2016040470

Method 8270/SIM

Spiked Sample:

2016040470-2

Units:

ng/mi (off column)

Date Extracted: Date Analyzed: Apples to Samples: 04/21/16

04/21/16 #1-6

< = less than

#### PAH/ PNA Quality Control Results--SIM Matrix Spike/ Matrix Spike Duplicate Results

	Sample	Spike	MS	MS	MSD	MSD		
Compound	Result	Amt.	Result	% Rec.	Result	% Rec.	RPD	
Naphthalene	<100	500	322	64	338	68	4.8	
2-Methylnaphthalene	<100	500	404	81	421	84	4.1	
1-Methylnaphthalene	<100	500	316	63	329	66	4.0	
Acenaphthylene	<100	500	267	53	290	58	8.3	
Acenaphthene	<100	500	305	61	335	67	9.4	
Dibenzofuran	<100	500	303	61	336	67	10.3	
Fluorene	<100	500	316	63	348	70	9.6	
Phenanthrene	<100	500	336	67	373	75	10.4	
Anthracene	<100	500	297	59	325	65	9.0	
Fluoranthene	<100	500	373	75	398	80	6.5	
Pyrene	<100	500	292	58	313	63	6.9	
Benzo(a)Anthracene	<100	500	387	77	394	79	1.8	
Chrysene	<100	500	335	67	335	67	0.0	
Benzo(b)Fluoranthene	<100	500	420	84	434	87	3.3	
Benzo(k)Fluoranthene	<100	500	452	90	480	96	6.0	
Benzo(a)Pyrene	<100	500	419	84	437	87	4.2	
Indeno(1,2,3-cd)Pyrene	<100	500	432	86	379	76	13.1	
Dibenzo(a,h)Anthracene	<100	500	368	74	345	69	6.5	
Benzo(g,h,i)Perylene	<100	500	298	60	280	56	6.2	

SURROGATE RECOVERIES

Nitrobenzene-d5 2-Fluorobiphenyl p-Terphenyl-d14

% Rec 62 57 60

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April 29, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Spectra Project # 2016040470 Sample Spiked: Method Blank Date Extracted: 4/25/2016 Date Analyzed: 4/25/2016 Units: mg/Kg Applies to Spectra #s: #7-14, 16-21

### GCMS Semi-Volatile Organic Analysis, Method 8270D (Scan Mode) Blank Spike (LCS) Results in Soil/ Solids

Compound	Blank	Spike	LCS	LCS
	Conc.	Added	Conc.	%Rec
Phenol	<0.08	2.50	1.33	53
2-Chlorophenol	<0.08	2.50	1.26	51
1,4-Dichlorobenzene	<0.08	1.67	0.80	48
N-Nitroso-Di-N-Propylamine	<0.08	1.67	0.86	51
1,2,4-Trichlorobenzene	<0.08	1.67	0.83	50
4-Chloro-3-Methylphenol	< 0.08	2.50	1.39	55
Acenaphthene	< 0.03	1.67	0.87	52
2,4-Dinitrotoluene	<0.08	1.67	0.87	52
4-Nitrophenol	<0.08	2.50	1.23	49
Pentachlorophenol	<0.08	2.50	0.67	27
Pyrene	<0.03	1.67	1.03	62
Surrogates				%Rec
2-Fluorophenal				49
Phenol-d5				56
Nitrobenzene-d5				55
2-Fluorobiphenyl				58
2,4,6-Tribromophenol				55
p-Terphenyl-d14				69

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April 29, 2016

Pyricine	Eastorn Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102		Sample Matrix: Spectra Project: Applies to:	Soil 2016040470 87-14, 16-21	Date Extracted: Date Analyzed: Dilution: < = less than	4/25/20 4/25/20 1	4.5
Pytidine	SEMIVOLATILE ORGANIC ANALYS	IS METHOD BE	ANK RESULTS			METHO	D 8270
N-Nitrosodimethylamina			mg/Kg	Compound			mg/Kg
Aralline				Aceraphthene			< 0.03
Phenol	TO SECTION ASSESSMENT OF THE PARTY OF THE PA		< 0.08	2,4-Dinitrophen	ol.		< 0.33
bis(2-Chioroethyl)Ether	7		< 0.33	4-Nitrophenol			< 0.08
2-Chirorophanol			< 0.08	Diperzofuran			< 0.08
1,3-Dichforobenzene	The state of the s		< 0.08	2,4-Dinitrotolue	ne		< 0.08
1,4-Dichforobertzene	2-Chlorophenol		< 0.08	2,6-Dinitrotolus	ne		< 0.08
Benzyl Alcohol	1,3-Dichlorobenzene		< 0.08	Diethylphthalate	1		< 0.08
1,2-Dichloroberzene	1,4-Dichlorobenzene		< 0.08	4-Chlorophenyl	phenylether		< 0.08
2-Methylphenol	Benzyl Alcohol		< 0.08	Fluorene			< 0.03
bis(2-Chlorois)rpopy)Ether	1,2-Dichlorobenzene		< 0.08	4-Nitroaniline			< 0.08
4-Methylphenol	2-Methylphenol		< 0.08	4,6-Dinitro-2-M	ethylphenol		< 0.33
N-Nitroso-di-n-Propylamine	his(2-Chloroisipropyl)Ether		< 0.08	Ni-Nitrosodiphe	nylamine		< 0.08
Hexachicroetitane	4-Methylphenol		< 0.08	4-Bromophenyl	phenylether		< 0.08
Năroberzone         < 0.08	N-Nitroso-di-n-Propylamine		< 0.08	Hexachlorobers	zene		< 0.08
Sophorone	Hexachicroethane		< 0.08	Pentachlorophe	not		< 0.08
2.Nitrophenol	Nirobenzone		< 0.08	Phenanthrene			< 0.03
2-Nitrophenol         < 0.08	Isophorone		< 0.08	Anthracene			< 0.03
Benzoto Acid	2-Nitrophenol		< 0.08	Oi-n-butylphthal	ate		< 0.08
Benzoto Acid	2,4-Dimethylphenol		< 0.08	Fluoranthene			< 0.03
bis(2-Chloroethoxy)methane	Benzoic Acid		< 0.33	Benzidine			< 0.66
2,4-Dichlorophenol       < 0.08	bis(2-Chloroethoxy)methane		< 0.08	Pyrone			< 0.03
1,2,4-Trichlorobenzene         < 0.08	2,4-Dichlorophenol		< 0.08	Butylbaraylohth	olato		< 0.08
Naphthulerne	1,2,4-Trichlorobenzene		< 0.08				< 0.66
4-Chloroantime	Naphthalone		< 0.03				< 0.03
Hexachlorobutadiene	4-Chloroantine		< 0.08	bis(2-ethylhexyl	ohthalate		< 0.08
4-Chloro-3-Methylphenol	Hexachlorobutadinno		< 0.08				< 0.03
2-Methytnaphthalene         < 0.03	4-Chioro-3-Methylphonol		< 0.08		late		< 0.08
Hexachlorocyclopentadiene	2-Methylnaphthalene		< 0.03				< 0.03
2.4,6-Trichtorophenol         < 0.08	Hexachlorocyclopentadiene		< 0.08				< 0.03
2.4,5-Trichlorophenol         4 0.08         Indexo(1,2,3-c,d)pyrone         < 0.2	2,4,6-Trichlorophenol		< 0.08				< 0.03
2-Chloronephthalene         < 0.08	2,4,5-Trichlorophenol		< 0.08	100000000000000000000000000000000000000			< 0.03
2-Nitroaniline         < 0.08	2-Chloronaphthalene		< 0.08		A CONTRACTOR OF THE PROPERTY O		< 0.03
Dimethyl Phthalate	2-Nitroanfline		< 0.08				< 0.03
Aceraphthylene         < 0.03	Dimethyl Phthelate		< 0.08				= 0.08
3-Nitronniline	Aconaphrhylene		< 0.03				< 0.08
Dibenzothlophene < 0 Tetrachlorophenoi < 0 SURROGATE RECOVERIES	3-Nitroaniine		≠ 0.08		alerro		- 0.08
Tetrachlorophenol < 0 SURROGATE RECOVERIES			146.0				< 0.08
ACCIONATE AND							< 0.08
Ntrobenzene-d5 63 % 2-Fluorophenol 52 %			SURROGATE RECO	VERIES			
	Narobenzene-d6	63	%	2-Fluorophenol		52	%
2-Fluorobiphenyl 59 % Phenol-d5 61 %	2-Fluorobipheryl	69	*	Phenol-d6		81	%

2,4,6-Tribromophenol

Steven G. Hibbs Laboratory Manager

p-Terphenyl-d14

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April 29, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Spectra Project # Sample Spiked: Date Extracted: Date Analyzed: Units:

Applies to Spectra #'s:

2016040470 2016040470-13 4/25/2016 4/25/2016 mg/kg wet wt. #7-14, 16-21

### GCMS Semi-Volatile Organic Analysis, Method 8270D (Scan Mode) Matrix Spike/ Matrix Spike Duplicate Results in Soil

Compound	Sample	Spike	MS	MS	MSD	MSD	
	Conc.	Added	Conc.	%Rec	Conc	%Rec	RPD
Phenal	<0.08	2.50	1.29	52	1.13	45	13.3
2-Chlorophenol	<0.08	2.50	1.24	50	1.09	43	13.2
1,4-Dichlorobenzene	<0.08	1.67	0.78	47	0.68	41	13.7
N-Nitroso-Di-N-Propylamine	<0.08	1.67	0.85	51	0.78	47	9.4
1,2,4-Trichlorobenzene	<0.08	1.67	0.81	49	0.70	42	14.1
4-Chloro-3-Methylphenol	< 0.08	2.50	1.34	54	1.22	49	9.8
Acenaphthene	< 0.03	1.67	0.87	52	0.75	45	14.4
2,4-Dinitrotoluene	< 0.08	1.67	0.91	54	0.78	47	15.0
4-Nitrophenol	< 0.08	2.50	1.35	54	1.12	45	18.6
Pentachlorophenol	<0.08	2.50	0.99	40	0.79	32	22.1
Pyrene	< 0.03	1.67	1.15	69	0.98	59	15.8

<sup>\*</sup>Out of limits due to sample matrix effects.

Steven G. Hibbs

Laboratory Manager

2221 Ross Way •

4/30/2016

April 30, 2016

Date Digested:

Eastern Research Grp. Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151

Units:

Spectra Project: Applies to Spectra #'s

Date Analyzed:

mg/Kg 2016040470

Analyst:

< 0.2

1-14,16-21 SCJ

#### QUALITY CONTROL RESULTS

ICP-MS Metals - SW846 6020B - Soil/Solid Method Blank

Element	CAS#	Blank Result
Arsenic	7440-38-2	< 0.2
Barium	7440-39-3	< 0.5
Cadmium	7440-43-9	< 0.2
Chromium	7440-47-3	< 0.5
Lead	7439-92-1	< 0.2
Selenium	7780-49-2	< 0.3

7440-22-4

Blank Spike (LCS)

Silver

Date Digested: 4/30/2016 Date Analyzed:

4/30/2016

4/30/2016

		Spike	LCS	LCS	
	Element	Added	Conc.	%Rec	
-	Arsenic	200.0	203.60	101.8	
	Barium	200.0	198.70	99.4	
	Cadmium	200.0	205.80	102.9	
	Chromium	200.0	215.20	107.6	
	Lead	200.0	203.40	101.7	
	Selenium	200.0	198.80	99.4	
	Silver	200.0	203.00	101.5	

Comment: LCS diluted 1/20 for analysis

LCS Recovery limits 80-120%

Date Digested: Sample Spiked:

Matrix Splke/Ma		
4/30/2016	Date Analyzed:	4/30/2016
2016040470-1	1,000	

	Sample	Spike	MS	MS	MSD	MSD	
Element	Conc.	Conc.	Conc.	%Rec	Conc	%Rec	RPD
Arsenic	2.78	200.0	221,40	109.3	208.00	102.6	6.3
Barium	27.43	200.0	264.60	118.6	265.40	119.0	0.3
Cadmium	0.00	200.0	212.00	106.0	206.00	103.0	2.9
Chromium	12.71	200.0	226.00	106.6	231.00	109.1	2.3
Lead	1.72	200.0	212.80	105.5	210.60	104.4	1.0
Selenium	0.00	200.0	205.00	102.5	192.10	96.1	6.5
Silver	1.08	200.0	214.40	106.7	211.80	105.4	1.2

Comment: Sample diluted 1/20 for analysis

Recovery Limits 70-130%

RPD Limit 20

SPECTRA LABORATORIES

April 25, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151

Method:

SW846 7471B

Spectra Project:

2016040470

Applies to Spectra #'s 1-14, 16-21

Sample Matrix:

Solid

### MERCURY

QUALITY CONTROL RESULTS MS/MSD

Units:	mg/Kg		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Date Anal	yzed:	4/25/16
		Spike	/2/22	100			
	Sample	Amount	MS	%	MSD	%	
Spike Sample	Result	Added	Result	Recovery	Result	Recovery	RPD

2010040470-1	0.000	0.4000	0.410	102.5	0.380	95.0	7.6

Units	mg/Kg	Date Analyzed:	4/25/16
Units	mg/Kg	Date Analyzed:	4/25/

		Spike		
Spike Sample	Sample Result	Amount Added	MS Result	% Recovery
LCS	<0.05	0.5000	0.502	100.4

METHOD BLANK	

METHOD BLANK		
	Date Analyzed:	4/25/16

Units: mg/Kg

Mercury < 0.05

#### SPECTRA LABORATORIES

...Where experience matters

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May 3, 2016

Eeastern Research Grp, Inc.

14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-Dx

Sample Matrix:

Soil

Spectra Project:

2016040470

Applies to Spectra #:

1-6

Units:

mg/Kg

### HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

	-		_	
M	m /		773	~
10.70		n a	S-21	-

Spiked Sample:

040470-3

Date Extracted:

4/21/2016

Date Analyzed:

4/25/2016

Dup. Spike

Spike Sample Amount Compound Result Added

Spike Amount Found

Percent Recovery Amount Found

Percent Recovery

RPD

Diesel

<10 125 74.8

60

88.9

71

17.2

%

BLANK SPIKE (LCS)

Date Extracted: 4/21/2016 Date Analyzed:

4/25/2016

Compound

Spike Sample Amount Result Added

Spike Amount Found

Percent Recovery

Diesel

<10.0 125

95.2

76.16

METHOD BLANK

Date Extracted:

4/21/2016

Date Analyzed:

4/25/2016

Diesel

<10.0

mg/Kg

Heavy Oil

<50.0

mg/Kg

Surrogate Recovery:

p-terphenyl

97%

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May 3, 2016

Eeastern Research Grp, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

EPA Method 8082A

Sample Matrix:

Soil

Units:

mg/Kg

Spectra Project:

2016040470

Applies to Spectra #

1-6

PCB ANALYSIS QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: 2016040470-1 Date Extracted:

4/20/2016

Date Analyzed:

4/21-22-16

Dup. Spike

Spike Sample Amount

Result

Spike Amount Found

Percent Recovery Amount Found

Percent Recovery

RPD

AR1260

Compound

< 0.01 0.025 0.0188

75%

0.0160

64%

16.1

BLANK SPIKE (LCS)

Date Extracted:

4/20/2016

Date Analyzed:

4/21/2016

Compound

Sample Result

Spike Amount Added

0.025

Added

Amount Found

Spike

Percent Recovery

AR1260

< 0.01

0.0175

70%

METHOD BLANK

Date Extracted:

4/20/2016

Date Analyzed:

4/21/2016

PCB's

< 0.01

Surrogate Recovery:

Decachlorobiphenyl

78%

SPECTRA LABORATORIES

2221 Ross Way, Tacoma, WA 98421 (253) 272-4850 Fax (253) 572-9838 ww.spectra-lab.com info@spectra-lab.com SPECIAL INSTRUCTIONS/COMMENTS:

# **CHAIN OF CUSTODY**

WHEOLOUTO

www.spectra-lab.co			om	Re	tur	Sa	mple	98:	γ	N		Pa	ge	1	0	f	1	3	S	TAI	ND	A	RD	1		R	US	Н						
CLIENT: GS	A			ADD	RES	SS:																		/				DDRES						
PROJECT:			_								HYD	RO	CAR	ВО	NS		OF	IGA	NIC	S		ME	TAL	S					(	THE	ER			
CONTACT: MAN	K Briggs	2																																
SAMPLED BY: Pac				EHS													7																	
PHONE: 939-345				CONTAINERS					(Hc			/ENTS	A			SEA 8	PECIF	BA8	ECIFY															
e-MAIL. Mark-bing		Prefer F/	X D	片	CID	C shall	NWTPH-G	×	J684 SGT-HEM (TPH)	1864 HEM (FOG)	VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	PNA	908	TOTAL METALS RCRA	TOTAL METALS (SPECIFY)	TOLP METALS RORA 8	TCLP METALS (SPECIFY)	045	X	_	TNI		SOLIDS (SPECIFY)									
PURCHASE ORDER#				BEH	NWTPH-HCID	2	NWTPH-G	NWTPH-Dx	SGT	HEM	8260/624 VOA	OHE	-625	8270 PAH/PNA	8082/608 PCB	IL ME	IL ME	ME	WEI	PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT		DS (S									
SAMPLE ID	DATE SAMPLED	TIME	MATRIX	NUMBER	NWI	BTEX	NW FW	NWT	1684	1664	8260	8260	8270	8270	8082	TOTA	TOTA	TOLP	2	PH 9	EXT	TUR.	FLAS	BOD	SOLI									
HL-IA	4/19/11	3:15	rioz	4		1		1						1	1	1		1																
HL-1B		B:40	Soil	4		1		1						1	1			/																
HL-ZA		9:50		4		1		1						1	1			1																
HL-2B	4/19/11	6:58	100	4		1		1						1	1			1																
HL-3A		9:W				1		1	,					1	1			/																
HL-3B		- 9:20		4		1		-						1				1																
W-1A	4/19/11	9:38	SUI	2									1					/																
W-1B	4/19/1	9.55	suil	2									/					1																
W-2A	4/19/16	10:20	Suil	2									1					1																
W-2B	4/19/16	10:25	suil	2									1					-																
LAB USE ON	LY				2	SI	GNAT	URE					P	RINT	ED NA	ME				COM					DAT	E		TIME						
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Custody Seals: Y	Intact: Y N	RECEIVED I																																
Cooler Temp. 1.3 Samp	ole Temp. 3. 5	Payment Ter attorney's fe	rms: Net 3 es and all o	0 days	s. Pas costs	of col	acco	unts s	subje ardles	ct to 1 is of w	1/2% hether	per i	monti is file	h inte	rest. (	Co.,	WA	agre	es to p	ay al	Labo	ts of	colle pries,	LLC	inclu	ding re	ason	able						

2221 Ross Way, Tacoma, WA 98421 (253) 272-4850 Fax (253) 572-9838 www.spectra-lab.com info@spectra-lab.com

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### CHAIN OF CUSTODY

WILEO TO TO

www.spectra-lab.com info@spectra-lab.com Page 2 of 2 STANDARD RUSH Return Samples: Y N **ADDRESS** GSA CLIENT: ADDRESS: CHANGE PROJECT: **HYDROCARBONS ORGANICS** METALS OTHER CONTACT: MORE BYIGGS CONTAINERS SAMPLED BY: Pachel Striv TOTAL METALS (SPECIFY) TOLP METALS (SPECIFY) 8260 CHLOR SOLVENTS TOTAL METALS RORA 8 TCLP METALS RCRA 8 PHONE: 989-345-759 FAX: 1664 SGT-HEM (TPH) 8270-625 SEMI VOA SOLIDS (SPECIFY) Prefer FAX 8-MAIL: Mark. Briggs DErg. WiggMAIL 1664 HEM (FOG) BTEXAWTPH-G 8270 PAH/PNA NUMBER OF NWTPH-HCID 8082/608 PCB PH 9040/9045 FLASH POINT TX/TOX/EOX TURBIDITY PURCHASE ORDER # DATE MATRIX SAMPLE ID SAMPLED SAMPLED 4/19/11/10:45 50:11 W-3A W-3B 4/19116 11:00 5011 4/19/11 11:15 Soil P-2-1A 4/19/14 11:45 5011 RR-1B 12:00 WHY Trip Blank 4/19/16 9 10 SIGNATURE PRINTED NAME LAB USE ONLY COMPANY DATE TIME RELINQUISHED BY Dochel Steir 4/19/16 4:00 US Mail UPS Courier Client Shipping Container: RECEIVED BY Cooler Box Envelope None RELINQUISHED BY Tracking # RECEIVED BY Custody Seals: Y N Intact: Y N Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable Cooler Temp. 1-3 Sample Temp3. 5 attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Laboratories, LLC

2221 Ross Way, Tacoma, WA 98421 (253) 272-4850 Fax (253) 572-9838 www.spectra-lab.com info@spectra-lab.com SPECIAL INSTRUCTIONS/COMMENTS:

### CHAIN OF CUSTODY

10 LEOUD 10

Return Samples: Y N Page 3 of 3 STANDARD RUSH

CLIENT: GS	+		-	ADDI	RES	S:				-				-			_		_					CHA	NGE -
PROJECT:					Н	YDF	ROC	ARE	ONS		OR	GAN	IICS		ME	TALS	3	_				OTH	IER		
CONTACT: MONE B	m595																								
SAMPLED BY: Roch				EHS							100				í.	S									
PHONE: 955-345-75				CONTAINERS					E		/ENT	AC		SRA 8	PECIF	RA 8						_			-
e-MAIL: Mart. Brigs Derg. combi e-MAIL			X	OF CO	0	E G		1	-OG)	4	H SOL	ON IW	£ 8	ILS RO	TOTAL METALS (SPECIFY)	SISPC		2		E		ECIFY			
PURCHASE ORDER #				BER O	NWTPH-HCID	BTEX/NWTPH-G	H-G	H-Dx	1664 HEM (FOG)	8280/624 VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	8082/608 PCB	TOTAL METALS RCRA 8	MET	TCLP METALS ISPECIFY		PH BO40/9045	TX/TOX/EOX	TURBIDITY	2	SOLIDS (SPECIFY)			
SAMPLE ID	DATE SAMPLED	TIME	MATRIX	NUMBER	NWT	BTEX	NWTPH-G	NWTPH-DX	16641	8280/F	8260	8270-	8082/6	TOTAL	TOTAL	TOLP		06 11	DIXI	TURB	BOD	SOLID			
PP-2A	4/1511	1:00	501	2								1				1	H				T				
PP 28	4/19111	1:12	Soil	2								1				1									
RR-3A	4/15/16	1:20	Soil	2								1				1									
PR-38		1:30	sál	2				4				1				1									
RR-4A	4/15/11		3011									1				1									
PP-4B	4/19/16	1:20	sal	2				-				4				1		4	4	-	1			-	
UST-18	11/1/11	-	GW	-		-		-	+	-		+	+	-	3 0		H	1		+	+			+	
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5/27/2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantiliy, VA 20151-1102

- Labour 779	LCS	Matrix Spike	MS/MSD		
Compound	Recovery	Recovery	RPD	Surrogates	
Method EPA 8270D SIM				-	
Napthalene-SIM	32 - 121	23-96	≤35	Nitrobenzene d-5-SIM	38 - 92
2-Methylnapthalene-SIM	24 - 131	13 - 113	×35	2-Fluorobiphenyl-SIM	20-112
1-Methylnapthalene-SIM	37-115	30 - 92	<b>&lt;35</b>	p-Terphenyl d-14-SIM	9 - 137
Acenaphthylene-SIM	31 - 85	19 - 99	≤35	p suprenti a resum	5 - 700
Acenapthene-SIM	42 - 93	23 - 104	<b>s35</b>		
Fluorene-SIM	39 - 97	22 - 113	s35		
Phenanthrene-SIM	37 - 106	22 - 117	≤35		
Anthracene-SIM	34 - 89	35 - 85	≤35		
Fluoranthene-SIM	41 - 98	17-104	<b>&lt;35</b>		
Pyrene-SIM	6 - 140	10-119	≤35		
Benzo(a)Anthracene-SIM	45 - 95	15 - 137	≤35		
Chrysene-SIM	41-105	12 - 126	<b>\$35</b>		
Benzo(b)Fluoranthene-SIM	19 - 131	15 - 115	s35		
Benzo(k)Fluoranthene-SIM	38 - 133	20-110	≤35		
Benzo(a)Pyrene-SIM	34 - 103	31 - 103	535		
Indeno(1,2,3-cd)Pyrene-SIM	41 - 100	16-115	<b>\$35</b>		
Dibenz(a,h)Anthracene-SIM	39 - 107	25 - 104	<b>\$35</b>		
Benzo(ghi)Perylene-SIM	34 - 98	4-120	≤35		
Method EPA 8270D					
Phenol	32-84	17 - 103	<b>≤3</b> 5	2-Fluorophenol	12-100
2-Chlorophenol	35 - 84	14 - 100	<b>\$35</b>	Phenol-d5	20 - 104
1.4 Dichlorobenzene	15-90	21 - 92	<b>£35</b>	Nitrobenzene-d5	21 - 92
N-Nitroso-Di-N-Propylamin	31 - 104	15 - 105	≤35	2-Fluorobiphenyl	22-101
1,2,4-Trichlorobenzene	24 - 82	23 - 96	≤35	2,4,6-Tribromophenol	8 - 135
4-Chloro-3-Methylphenol	34-107	16-113	<b>&lt;35</b>	p-Terphenyl-d14	31 - 124
Acenapthene	34 - 98	27 - 103	≤35	P suspensifi and	21-121
24-Dinitrotoluene	32 - 105	24-100	≤35		
4-Nitrophenol	26 - 156	28-118	≤35		
Pentachiorophenol	0 - 85	3-111	≤35		
Pyrene	40 - 135	34 - 122	<b>≤35</b>		
Method EPA 8268C					
BTEX	80 - 120	75-125	s20	Toluene d-8	80 - 116
Method NWTPH-Gx				4-Bromofluorobenzene	97 - 138
Gasoline	85 - 115	NA	≤20	Toluene d-8	50 - 150
Method NWTPH-Dx				4-Bromofluorobenzene	50 - 150
V2 Diesel	38 - 107	40 - 90	520	- Words - I	20 111
	35 100	30 - 70	320	p-Terphenyi	39 - 111
Method EPA 8082A					
PCBs (AR1260)	45 - 104	49 - 103	≤20	Decachorobiphenyl	44 - 108
Method EPA 6020B					
Total Mutais	80 - 120	75 - 125	<b>&lt;20</b>		NA
Method EPA 7471B					
Total Mercury	80 - 120	75-125	≤20		NA
Method EPA 7196A					
Jexavalent Chromium	74-114	71 - 134	≤20		NA

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04/29/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: UST-1B Sample Matrix: Water Date Sampled: 04/19/2016

Date Received: 04/20/2016 Spectra Project: 2016040547

Spectra Number: 1

Analyte	Result	Units	Method
Diesel	<100	μg/L	NWTPH-D
Oil	<500	μg/L	NWTPH-D
Benzene	<1.0	μg/L	SW846 8260C
Ethylbenzene	<1.0	μg/L	SW846 8260C
Methyl-tert-Butyl Ether	<1.0	μg/L	SW846 8260C
Toluene	<1.0	μg/L	SW846 8260C
Total Xylenes	<2.0	μg/L	SW846 8260C

Surrogate	Recovery	Method
p-Terphenyl	75	NWIPH-D
Toluene-d8	95	SW846 8260C
4-Bromofluorobenzene	123	SW846 8260C

04/29/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Project: GSA

Client ID: UST-4B

Sample Matrix: Water 04/20/2016 Date Sampled:

Date Received: 04/20/2016

Spectra Project: 2016040547

Spectra Number: 2

Analyte	Result	Units	Method
Diesel	447*	μg/L	NWTPH-D
Oil	<500	μg/L	NWTPH-D
Benzene	<1.0	μg/L	SW846 8260C
Ethylbenzene	<1.0	μg/L	SW846 8260C
Methyl-tert-Butyl Ether	<1.0	μg/L	SW846 8260C
Toluene	<1.0	μg/L	SW846 8260C
Total Xylenes	<2.0	μg/L	SW846 8260C

Surrogate	Recovery	Method
4-Bromofluorobenzene	118	SW846 8260C
p-Terphenyl	63	NWTPH-D
Toluene-d8	91	SW846 8260C

<sup>\*</sup>Sample contains diesel range organics.

04/29/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA

UST-4Bdup Client ID:

Sample Matrix: Water

Date Sampled: 04/20/2016 Date Received: 04/20/2016

Spectra Project: 2016040547

Spectra Number: 3

Analyte	Result	Units	Method
Diesel	<100	μg/L	NWTPH-D
Oil	<500	μg/L	NWTPH-D
Benzene	<1.0	μg/L	SW846 8260C
Ethylbenzene	<1.0	μg/L	SW846 8260C
Methyl-tert-Butyl Ether	<1.0	μg/L	SW846 8260C
Toluene	<1.0	μg/L	SW846 8260C
Total Xylenes	<2.0	μg/L	SW846 8260C

Surrogate	Recovery	Method
4-Bromofluorobenzene	122	SW846 8260C
p-Terphenyl	72	NWIPH-D
Toluene-d8	91	SW846 8260C

04/29/2016

Project: GSA

Eastern Research Grp, Inc.

Client ID; Trip Blank
Sample Matrix: Water

 14555 Avion Parkway, Suite 200
 Date Sampled: 04/20/2016

 Chantilly, VA 20151-1102
 Date Received: 04/20/2016

Spectra Project: 2016040547

Spectra Number: 4

Analyte	Result	Units	Method
Benzene	<1.0	μg/L	SW846 8260C
Ethylbenzene	<1.0	μg/L	SW846 8260C
Methyl-tert-Butyl Ether	<1.0	μg/L	SW846 8260C
Toluene	<1.0	μg/L	SW846 8260C
Total Xylenes	<2.0	μg/L	SW846 8260C

Surrogate	Recovery	Method				
4-Bromofluorobenzene	118	SW846 8260C				
Toluene-d8	94	SW846 8260C				

...Where experience matters

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April 30, 2016

Eastern Research Grp, Inc.

14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-Dx

Sample Matrix:

Water

Spectra Project:

2016040547

Applies to Spectra #: 1-3

### HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample:

2016040549-1

Units:

ug/L

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

Dup.

Spike Spike

2500

Percent

Spike Amount Percent

%

Compound

Result Added

Sample Amount Amount Found

Recovery

Found Recovery

RPD

Diesel

<100

1652

66

1488

60 10.4

METHOD BLANK

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

Units:

ug/L

Diesel

<100

Heavy Oil

<500

Surrogate Recoveries:

p-terphenyl

107%

SPECTRA LABORATORIES

2221 Ross Way \* Tacoma, WA 98421

(253) 272-4850
 Fax (253) 572-9838
 www.spectra-lab.com

April 28, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Sample Matrix:

Water

EPA Method: EPA 624/8260C

Spectra Project: 20160040547

Date Analyzed:

4/22/2016

Units:

ug/L

Applies to: Spiked Sample: 2016040549-1

#1-4

#### BTEX by Method 624/ 8260C Matrix Spike/ Matrix Spike Duplicate Results

COMPOUND	SAMPLE RESULT	SPIKE	MS RESULT	% REC	MSD RESULT	DUP %REC	RPD
Benzene	<1.0	10.0	10.67	107	10.63	106	0.4
Toluene	<1.0	10.0	8.77	88	8.88	89	1.2
Ethylbenzene	<1.0	10.0	9.18	92	9.60	96	4.5
m,p-xylenes	<2.0	20.0	18.31	92	18.92	95	3.3
o-xylene	<1.0	10.0	9.58	96	10.19	102	6.2
MTBE	<1.0	10.0	10.54	105	10.22	102	3.1

Surrogates		MS	MSD	MB	Method Blank	ug/L
	Dibromofluoromethane	120	110	118	Benzene	<1.0
	1,2-Dichloroethane-d4	125	125	125	Toluene	<1.0
	Toluene-d8	95	97	93	Ethyl Benzene	<1.0
	4-Bromofluorobenzene	121	121	127	m,p-Xylenes	<2.0
					o-Xylenes	<1.0
					MTBE	<1.0

Steven G. Hibbs

Laboratory Manager

2221 Ross Way, Tacoma, WA 98421 (253) 272-4850 Fax (253) 572-9838 www.spectra-lab.com info@spectra-lab.com

SPECIAL	INSTRU	CTIONS/	COMMENTS:

Hold TATTY FOR PAHS at PCBS UNTIL RISULTS FOR BITTY and DRO Averable

CHAIN OF CUSTODY

WILLOUGHT

turn Samples: Y N Page

STANDARD

RUSH

CLIENT: GISA			- 1	DDF	ES	S:			_		-		_			-			_	-								CHAN	NGE -
PROJECT:					F	HYD	RO	CAF	RBO	NS	1	OF	RGA	NIC	cs	1	M	ETA	LS	+		_		(	ОТН	ER			1 1
CONTACT: MORE BY	555															П													
SAMPLED BY Poche	Stair			ERS								co.					3		2										
PHONE: 989 345 -7595	S FAX:			CONTAINERS					FE		П	VENT	AC			AG C	PECI	HA 8	PECIF					ł	0				
PURCHASE ORDER #	a) erz co	Prefer FA	V		NWTPH-HCID	BTEX	D-H-I O	-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)	8260/624 VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TOTAL METALS BODA 8	TOTAL METALS ISCRECIEVA	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	EOX	YTI	FLASH POINT		SOLIDS (SPECIFY)				k
	DATE	TIME	MATRIX	NUMBER	MTPH	BTEX	NWTPH-G	NWTPH-Dx	64 SG	64 HE	60/62	80 CF	70-62	70 PA	82/60	TAIL	TAI	LPM	LP M	9040	TX/TOX/EOX	TURBIDITY	ASH	ВОР	SOLIDS				
SAMPLE ID	SAMPLED		MATRIX	ž	Ž	B   9	2	12	116	16	82	82	82	8	8	1	2   5	12	١٤١	古	F	F	료	M M	S	+	+	-	H
UST-1B	4/15/16	2:45	GW	6	,			1	1					/	1		1									4	_		
UST-4B	4/20/16	Berug	WEW	6	1	1		1						1	1	1													
UST-4B DUP	4/20/16	Sonos	MACO	6	1	1		V	1					1	1														
Try Blank	4/20/16	9:20	GW	1	-	V .												-									+		
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Custody Seals: Y N Intac	4. V N	RECEIVED E	BY																										

Result Units

Method

# **SPECTRA** Laboratories

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05/17/2016

Project: GSA Client ID: UST-3B

Sample Matrix: Water Date Sampled: 04/20/2016

Date Received: 04/20/2016

Spectra Project: 2016040548

Spectra Number:1

Analyte

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Analyte Result Units Method Diesel <100 µg/L NWTPH-D Oil <500 NWTPH-D µg/L Benzene <1.0 µg/L SW846 8260C Ethylbenzene <1.0 µg/L SW846 8260C Methyl-tert-Butyl Ether <1.0 µg/L SW846 8260C Toluene <1.0 µg/L SW846 8260C Total Xylenes <2.0 µg/L SW846 8260C

Surrogate	Recovery	Method
p-Terphonyl	77	NWTPH-D
Tolucae-d8	93	SW846 8260C
4-Bromofluorobenzene	120	SW846 8260C

Eastern Research Grp, Inc.

Chantilly, VA 20151-1102

14555 Avion Parkway, Suite 200

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05/17/2016

Project:

GSA

Client ID:

Trip Blank

Sample Matrix:

Date Sampled: 04/20/2016

Date Received: 04/20/2016

Spectra Project: 2016040548

Spectra Number:2

	1 C - 14		
Analyte	Result	Units	Method
Benzene	< 0.025	mg/Kg	SW846 8260C
Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Toluene	< 0.025	mg/Kg	SW846 8260C
Total Xylenes	< 0.05	mg/Kg	SW846 8260C

Amelian	22 Ta	TT. CA.	8 F . O 1
Analyte	Result	Units	Method
			The second second

Surrogate	Recovery	Method
Toluene-d8	85	SW846 8260C
4-Bromofluorobenzene	121	SW846 8260C

05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: SB-1A Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:3

Analyte	Result	Units	Method	Analyte	Result	Units	Method
I-Methylnaphthalene-SIM	0.0033	mg/Kg	8270D SIM	Total Barium	28.8	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	0.0033	mg/Kg	8270D SIM	Total Cadmium	0.6	mg/Kg	SW846 6020B
Acenaphthene-SIM	0.0033	mg/Kg	8270D SIM	Total Chromium	27.1	mg/Kg	SW846 6020B
AcenaphthyleneSIM	0.0033	mg/Kg	8270D SIM	Total Lead	91.1	mg/Kg	SW846 6020B
Anthracene-SIM	0.0033	mg/Kg	8270D SIM	Total Selenium	0.5	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	0.0064	mg/Kg	8270D SIM	Total Silver	1.0	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	0.0150	mg/Kg	8270D SIM	Hexavalent Chromium	< 0.1	mg/Kg	SW846 7196A
Benzo(b)Fluoranthene-SIM	0.0226	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(ghi)PeryleneSIM	0.0107	mg/Kg	8270D SIM	PCB AR1260	0.01	mg/Kg	SW846 8082A
Benzo(k)Fluoranthene-SIM	0.0121	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	0.0229	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	
Dibenz(a,h)AnthraceneSIM	0.0033	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Fluoranthene-SIM	0.0179	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	
Fluorene-SIM	0.0033	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	
Indeno(1,2,3-cd)PyreneSIM	0.0078	mg/Kg	8270D SIM				
Naphthalene-SIM	0.0033	mg/Kg	8270D SIM				
Phenanthrene-SIM	0.0082	mg/Kg	8270D SIM				

Surrogate	Recovery	Method.	Surrogau	Recovery	Method
Toluene-d8	88	SW846 8260C	Nitrobenzene-d6SIM	48	8270D SIM
4-Bromofluorobenzene	119	SW846 8260C	2-Fluorobiphenyl-SIM	49	8270D SIM
p-Terphenyl	81	NWTPH-D	p-Terphenyl-d14-SIM	57	8270D SIM
Decachlorobiphenyl	65	SW846 8082A			

8270D SIM

NWTPH-D

NWTPH-D

SW846 6020B

SPECTRA LABORATORIES

0.0138

<10.0

<50.0

16.8

mg/Kg

mg/Kg

mg/Kg

mg/Kg

Pyrene-SIM

Total Arsenic

Diesel

Oil

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05/17/2016

Phenanthrene--SIM

Pyrene-SIM

Total Arsenic

Diesel

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: SB-1B Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:4

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-MethylnaphthaleneSIM	0.0033	mg/Kg	8270D SIM	Total Barium	13.7	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	0.0033	mg/Kg	8270D SIM	Total Cadmium	< 0.2	mg/Kg	SW846 6020B
Acenaphthene-SIM	0.0033	mg/Kg	8270D SIM	Total Chromium	18.3	mg/Kg	SW846 6020B
Acenaphthylene-SIM	0.0033	mg/Kg	8270D SIM	Total Lead	1.1	mg/Kg	SW846 6020B
AnthraceneSIM	0.0033	mg/Kg	8270D SIM	Total Selenium	1.0	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	0.0033	mg/Kg	8270D SIM	Total Silver	0.8	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	0.0033	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(b)Fluoranthene-SIM	0.0044	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(ghi)Perylene-SIM	0.0033	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Benzo(k)Fluoranthene-SIM	0.0033	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	0.0054	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)AnthraceneSIM	0.0033	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
Fluoranthene-SIM	0.0033	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
FluoreneSIM	0.0033	mg/Kg	8270D SIM			2 2 3	
Indeno(1,2,3-cd)PyreneSIM	0.0033	mg/Kg	8270D SIM				
NaphthaleneSIM	0.0033	mg/Kg	8270D SIM				

Surrogate	Recovery	Mathod	Surrogate	Recovery	Method
Yoluene-d8	86	SW846 8260C	Nitrobeazene-d6SIM	52	8270D SIM
4-Bromofluorobenzene	118	SW846 8260C	2-FluorobiphenylSIM	48	8270D SIM
p-Terphenyl	100	NWTPH-D	p-Terphenyl-d14SIM	56	8270D SIM
Decachlorobiphonyl	62	SW846 8082A			

8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

mg/Kg SW846 6020B

0.0033

0.0033

<10.0

<50.0

1.9

mg/Kg

mg/Kg

mg/Kg

mg/Kg

05/17/2016

Project: GSA Client ID: SB-2A Sample Matrix: Soil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:5

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Barium	35.5	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	0.4	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	12.7	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Lead	11.4	mg/Kg	SW846 6020B
Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(b)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(ghi)Perylene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
ChryseneSIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
Fluorene-SIM	< 0.100	mg/Kg	8270D SIM				
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM				
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM				

Recovery	Method	
86	SW846 8260C	
115	SW846 8260C	
94	NWTPH-D	
69	SW846 8082A	
	86 115 94	86 SW846 8260C 115 SW846 8260C 94 NWTPH-D

< 0.100

< 0.100

<10.0

<50.0

4.2

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

SW846 6020B

Surrogate	Recovery	Method		
Nitrobenzene-d6SIM	49	8270D SIM		
2-Fluorobiphenyi-SIM	46	8270D SIM		
p-Terphenyl-d14-SIM	62	8270D SIM		

SPECTRA LABORATORIES

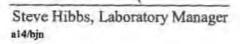
Phenanthrene-SIM

Pyrene--SIM

Total Arsenic

Diesel

Oil



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05/17/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Project: GSA Client ID: SB-2B Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:6

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Barium	28.6	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	0.2	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	14.4	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Lead	14.5	mg/Kg	SW846 6020B
Anthracene-SIM	<0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(a)PyreneSIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(b)FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(ghi)PeryleneSIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
FluoreneSIM	< 0.100	mg/Kg	8270D SIM				
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM				
NaphthaleneSIM	< 0.100	mg/Kg	8270D SIM				

Surrogate	Recovery	Method
Toluene-d8	86	SW846 8260C
4-Bromofiuorobenzene	117	SW846 8260C
p-Terphenyl	91	NWTPH-D
Decachlorobiphenyl	63	SW846 8082A

< 0.100

< 0.100

<10.0

<50.0

3.0

mg/Kg

mg/Kg

mg/Kg

mg/Kg

8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

mg/Kg SW846 6020B

Surrogne	Recovery	Method
Niuobenzene-d6SIM	52	8270D SIM
2-FluorobipheaylSIM	50	8270D SIM
p-Terphenyl-d14-SIM	54	8270D SIM

SPECTRA LABORATORIES

Phenanthrene-SIM

Pyrene-SIM

Total Arsenic

Diesel

Oil

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05/17/2016

Phenanthrene-SIM

Pyrene-SIM

Diesel

Gasoline

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: GS-2A Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:7

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Arsenic	4.6	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Barium	48.1	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	0.4	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	14.6	mg/Kg	SW846 6020B
AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Total Lead	6.0	mg/Kg	SW846 6020B
Benzo(a)AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(b)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(ghi)Perylene-SIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
FluoreneSIM	<0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM				
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM				

Surrogate	Recovery	Method	Surrugate	Recovery	Method
Toluene-d8	87	SW846 8260C	4-Bromofluorobenzene	146	NWTPH-G
4-Bromofiuorobenzene	120	SW846 8260C	Decachlorobiphenyl	61	SW846 8082A
p-Terphenyl	89	NWTPH-D	Nitrobenzene-d6-SIM	69	8270D SIM
Toluene-d8	101	NWTPH-G	2-Fluorobiphenyl-SIM	49	8270D SIM

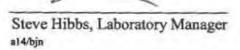
8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

NWTPH-G



< 0.100

< 0.100

<10.0

<50.0

<5

mg/Kg

mg/Kg

mg/Kg

mg/Kg



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05/17/2016

Pyrene--SIM

Diesel

Gasoline

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: GS-2B Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:8

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-MethylnaphthaleneSIM	< 0.100	mg/Kg	8270D SIM	Total Arsenic	5.8	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Barium	46.0	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	< 0.2	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	21.4	mg/Kg	SW846 6020B
Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Lead	42.2	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	<0.100	mg/Kg	8270D SIM	Total Silver	0.3	mg/Kg	SW846 6020B
Benzo(b)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Hexavalent Chromium	0.12	mg/Kg	SW846 7196A
Benzo(ghi)Perylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Fluorene-SIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM			1787	
PhenanthreneSIM	< 0.100	mg/Kg	8270D SIM				

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Toluene-d8	87	SW846 8260C	4-Bromofluorobenzene	139	NWTPH-G
4-Bromofluorobenzene	112	SW846 8260C	Decachiorobiphenyl	65	SW846 8082
p-Terphenyl	88	NWTPH-D	Nitrobenzene-d6-SIM	64	8270D SIM
Toluenc-d8	101	NWIPH-G	2-Pluorobiphenyl-SIM	48	8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

**NWTPH-G** 

< 0.100

<10.0

<50.0

<5

mg/Kg

mg/Kg

mg/Kg

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05/17/2016

Pyrene-SIM

Diesel

Gasoline

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: GS-1A Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:9

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-MethylnaphthaleneSIM	< 0.100	mg/Kg	8270D SIM	Total Arsenic	4.2	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Barium	42.9	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	0.2	mg/Kg	SW846 6020B
AcenaphthyleneSIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	14.3	mg/Kg	SW846 6020B
Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Lead	2.3	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)PyreneSIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(b)FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(ghi)PeryleneSIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	0.000	
Dibenz(a,h)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	
Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025		
FluoreneSIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	
Indeno(1,2,3-cd)Pyrene-SIM	< 0.100	mg/Kg	8270D SIM				
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM				
Phenanthrene-SIM	< 0.100	mg/Kg	8270D SIM				

Surrogate	Recovery	Method	Surrogate	Recovery	Method
4-Bromofinorobenzene	117	SW846 8260C	4-Bromofluorobenzene	146	NWTPH-G
Toluene-d8	85	SW846 8260C	Decachloroblphenyl	62	SW846 8082A
p-Terphenyl	89	NWTPH-D	Nitrobenzene-d6-SIM	63	8270D SIM
Tobsene-d8	99	NWTPH-G	2-Fluorobiphenyl-SIM	50	8270D SIM

8270D SIM

NWTPH-D

NWTPH-D

NWTPH-G

< 0.100

<10.0

<50.0

<5

mg/Kg

mg/Kg

mg/Kg

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05/17/2016

Diesel

Gasoline

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Client ID: GS-1B Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:10

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-MethylnaphthaleneSIM	<0.100	mg/Kg	8270D SIM	Total Arsenic	5.1	mg/Kg	SW846 6020B
2-Methylnaphthalene-SIM	<0.100	mg/Kg	8270D SIM	Total Barium	52.9	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	< 0.2	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	16.7	mg/Kg	SW846 6020B
AnthraceneSIM	<0.100	mg/Kg	8270D SIM	Total Lead	2.2	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Selenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)PyreneSIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(b)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(ghi)Perylene-SIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
Fluorene-SIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM				
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM				
Phenanthrene-SIM	< 0.100	mg/Kg	8270D SIM				
Pyrene-SIM	< 0.100	mg/Kg	8270D SIM				

	Method
138	NWTPH-G
72	SW846 8082A
63	8270D SIM
53	8270D SIM
	53

NWTPH-D

NWTPH-D

NWTPH-G

Steve Hibbs, Laboratory Manager

<10.0

<50.0

<5

mg/Kg

mg/Kg

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05/17/2016

Diesel

Gasoline

Oil

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA

Client ID: GS-1Adup

Sample Matrix: Soil

Date Sampled: 04/20/2016 Date Received: 04/20/2016 Spectra Project: 2016040548

Spectra Number:11

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1-Methylnaphthalene-SIM	< 0.100	mg/Kg	8270D SIM	Total Arsenic	4.2	mg/Kg	SW846 6020B
2-MethylnaphthaleneSIM	< 0.100	mg/Kg	8270D SIM	Total Barium	37.6	mg/Kg	SW846 6020B
Acenaphthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Cadmium	< 0.2	mg/Kg	SW846 6020B
Acenaphthylene-SIM	< 0.100	mg/Kg	8270D SIM	Total Chromium	14.5	mg/Kg	SW846 6020B
AnthraceneSIM	< 0.100	mg/Kg	8270D SIM	Total Lead	1.9	mg/Kg	SW846 6020B
Benzo(a)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Total Sclenium	< 0.3	mg/Kg	SW846 6020B
Benzo(a)Pyrene-SIM	< 0.100	mg/Kg	8270D SIM	Total Silver	0.4	mg/Kg	SW846 6020B
Benzo(b)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Total Mercury	< 0.05	mg/Kg	SW846 7471B
Benzo(ghi)PeryleneSIM	< 0.100	mg/Kg	8270D SIM	PCB	< 0.01	mg/Kg	SW846 8082A
Benzo(k)Fluoranthene-SIM	< 0.100	mg/Kg	8270D SIM	Benzene	< 0.025	mg/Kg	SW846 8260C
Chrysene-SIM	< 0.100	mg/Kg	8270D SIM	Ethylbenzene	< 0.025	mg/Kg	SW846 8260C
Dibenz(a,h)Anthracene-SIM	< 0.100	mg/Kg	8270D SIM	Methyl-tert-Butyl Ether	< 0.025	mg/Kg	SW846 8260C
FluorantheneSIM	< 0.100	mg/Kg	8270D SIM	Toluene	< 0.025	mg/Kg	SW846 8260C
FluoreneSIM	< 0.100	mg/Kg	8270D SIM	Total Xylenes	< 0.05	mg/Kg	SW846 8260C
Indeno(1,2,3-cd)PyreneSIM	< 0.100	mg/Kg	8270D SIM				
Naphthalene-SIM	< 0.100	mg/Kg	8270D SIM				
Phenanthrene-SIM	< 0.100	mg/Kg	8270D SIM				
PyreneSIM	< 0.100	mg/Kg	8270D SIM				

Surrogate	Recovery	Method	Surrogate	Recovery	Method
-Bromofluorobenzene	118	SW846 8260C	4-Bromofluorobenzene	147	NWTPH-G
p-Terphenyl	80	NWTPH-D	Decachiorobiphenyl	73	SW845 8082A
Foluene-d8	86	SW846 8260C	Nitrobenzene-d6-SIM	63	8270D SIM
Folnene-d8	100	NWTPH-G	2-FluorobiphenylSIM	53	8270D SIM

NWTPH-D

NWTPH-D

NWTPH-G

<10.0

<50.0

<5

mg/Kg

mg/Kg

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May 17, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151

Units:

mg/Kg

Spectra Project:

2016040548

Applies to Spectra #'s:

3,8

#### QUALITY CONTROL RESULTS

Hexavalent	Chromium ir	Soll/Solid -	Method	SM 3500	Cr-D/	SW846 7196	A
		34.41	J mr				

Method I	Blank
----------	-------

Date Extracted: 5/17/2016

Date Analyzed:

5/17/2016

Method Blank

Hexavalent Chromium

< 0.1

Blank Spike (LCS)

Date Extracted: 5/17/2016

Date Analyzed:

5/17/2016

Spike Added LCS

LCS

Hexavalent Chromium

Conc.

%Rec

1.00

0.980

98.0

LCS Recovery limits 80-120%

Blank Spike Duplicate (LCSdup)

Date Extracted: 5/17/16

Date Analyzed:

5/17/2016

Conc.

Spike LCS LCS

Added

%Rec

RPD:

Hexavalent Chromium

1.00 0.910 91.0

7.4

\*\*Due to color interferences caused by the sample, the matrix spike and matrix spike duplicate were diluted out of the sample.

LCS Recovery limits 80-120%

RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs

Laboratory Manager

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May 11, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Sample matrix: Soil Spectra Project: Method 8270/SIM

2016040548

Date Extracted: Date Analyzed: Apples to Samples: < = less than

04/27/16 04/27/16 #3-11

#### POLYNUCLEAR AROMATIC HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

Laboratory Control Sampl	e (LCS)			Method Blank
	True	LCS		
Compound	Value, ng/ml	Result	% Rec	Blank Result, mg/Kg
Naphthalene	250	120	48	< 0.0033
2-Methylnaphthalene	250	137	55	< 0.0033
-Methylnaphthalene	250	119	48	<0.0033
Acenaphthylene	250	89	36	< 0.0033
Acenaphthene	250	121	48	< 0.0033
luorene	250	124	50	< 0.0033
Phenanthrene	250	141	56	< 0.0033
Anthracene	250	122	49	< 0.0033
luoranthene	250	162	65	< 0.0033
yrene	250	167	67	< 0.0033
Benzo(a)Anthracena	250	163	65	< 0.0033
Chrysene	250	180	72	< 0.0033
Benzo(b)Fluoranthene	250	159	64	< 0.0033
Benzo(k)Fluoranthene	250	213	85	< 0.0033
Benzo(a)Pyrene	250	127	51	< 0.0033
ndeno(1,2,3-od)Pyrene	250	206	82	< 0.0033
ibenzo(a,h)Anthracene	250	189	76	< 0.0033
Benzo(g,h,l)Perylene	250	173	69	<0.0033
SURROGATE RECOVERIE	s		% Rec	% Rec
Vitrobenzene-d5			48	57
-Fluorobiphenyl			43	53
-Terphenyl-d14			71	68

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May 11, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151-1102

Project: GSA Sample matrix: Soil

Spectra Project. Method 8270/SIM

Spiked Sample:

Units: ng/mil (in extract) Date Extracted: Date Analyzed:

04/27/16 04/27/16 #3-11

Apples to Samples: < = less than

PAH/ Pentachlorophenol Quality Control Results-SIM Matrix Spike/ Matrix Spike Duplicate Results

2016040548

2016040548-8

	Sample	Spike	MS	MS	MSD	MSO	
Compound	Result	Amt.	Result	% Rec.	Result	% Rec.	RPD
Naphthelene	<50	500	312	62	221	44	34.1
2-Methylnaphthalene	<50	500	387	77	280	56	32.1
1-Methylnaphthalene	<50	500	336	67	241	48	32.9
Acenaphthylene	<50	500	230	46	196	39	16.0
Acenaphthene	<50	500	270	54	234	47	14.3
Dibenzofuran	<50	500	263	53	234	47	11.7
Fluorene	<50	500	270	54	253	51	6.5
Phenanthrene	<50	500	300	60	258	52	15.1
Anthracene	<50	500	275	55	262	52	4.8
Fluoranthene	<50	500	325	85	332	66	2.1
Pyrene	<50	500	300	60	324	65	7.7
Benzo(a)Anthracene	<50	500	303	61	280	56	7.9
Chrysene	<50	500	320	64	313	63	2.2
Benzo(b)Fluoranthene	<50	500	312	62	322	64	3.2
Berizo(k)Fluoranthene	<50	500	324	65	308	62	5.1
Berizo(a)Pyrenii	<50	500	350	70	348	70	0.6
Indeno(1,2,3-cd)Pyrene	<50	500	352	70	330	66	6.5
Diberzo(a,h)Anthracene	<50	500	356	71	322	64	10.0
Benzo(g,h,i)Perylene	<50	500	429	86	382	76	11.6
Pentachlorophenol	<50	500	390	78	348	70	11,4
SURROGATE RECOVERIES				% Rec		%Rec	
Nitrobenzene-d5				BT		47	
2-Fluorobiphenyl				48		40	
p-Terphenyl-d14				58		56	

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May 13, 2016

Eastern Research Grp, Inc.

14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

EPA Method 8082A

Sample Matrix:

Soil

Units:

mg/Kg

Spectra Project:

2016040548

Applies to Spectra #

3 - 11

### PCB ANALYSIS QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: 2016040548-11

Date Extracted:

5/12/2016

Date Analyzed:

5/12/2016

Dup.

Spike Amount

Spike Amount

Percent

Spike Amount

Percent

Result

Added Found

Recovery

Found

Recovery

RPD

AR1260

Compound

< 0.01

Sample

0.0172

69%

0.0158

63%

9.1

Date Extracted:

5/11/2016

BLANK SPIKE (LCS)

Date Analyzed:

5/11/2016

Compound

Sample Result

Spike Amount Added

0.025

Spike Amount

Found

Percent Recovery

AR1260

< 0.01

0.025

0.0141

56%

METHOD BLANK

Date Extracted:

5/11/2016

Date Analyzed:

5/11/2016

PCB's

< 0.01

Surrogate Recovery:

Decachlorobiphenyl

68%

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April 28, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Sample Matrix:

Water

EPA Method: EPA 624/8260C

Spectra Project: 20160040548

Date Analyzed;

4/22/2016

Units: Applies to: ug/L

#1

Spiked Sample: 2016040549-1

#### BTEX by Method 624/ 8260C Matrix Spike/ Matrix Spike Duplicate Results

COMPOUND	SAMPLE RESULT	SPIKE AMOUNT	MS RESULT	% REC	MSD RESULT	DUP %REC	RPD
Benzene	<1.0	10.0	10.67	107	10.63	106	0.4
Toluene	<1.0	10.0	8.77	88	8.88	89	1.2
Ethylbenzene	<1.0	10.0	9.18	92	9.60	96	4.5
m,p-xylenes	<2.0	20.0	18.31	92	18.92	95	3.3
o-xylene	<1.0	10.0	9.58	96	10.19	102	6.2
MTBE	<1.0	10.0	10.54	105	10.22	102	3.1

Surrogates		MS	MSD	MB	Method Blank	ug/L
	Dibromofluoromethane	120	110	118	Benzene	<1.0
	1,2-Dichloroethane-d4	125	125	125	Toluene	<1.0
	Toluene-d8	95	97	93	Ethyl Benzene	<1.0
	4-Bromofluorobenzena	121	121	127	m,p-Xylenes	<2.0
					o-Xylenes	<1.0
					MTBE	<1.0

Steven G. Hibbs

Laboratory Manager

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April 29, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102

Sample Matrix:

Soil

EPA Method: SW-846 8260-C

Spiked Sample: 2016040548-11

Date Analyzed:

4/27/2016

Units:

mg/Kg

Spectra Project: 2016040548

Applies to: #2-11

#### BTEX by Method 8260-Methanolic Extraction Blank Spike/ Spike Duplicate Results

COMPOUND		SAMPLE RESULT	SPIKE AMOUNT	SPIKE	% REC	DUP RESULT	DUP %REC	RPD
Benzene		<0.025	0.50	0.608	122	809.0	122	0.1
Toluene		<0.025	0.50	0.475	95	0.478	96	0.7
Ethylbenzene		<0.025	0.50	0.481	96	0.467	93	3.0
n.p-Xylenes		<0.05	1.00	0.944	94	0.947	95	0.3
-Xylenes		<0.025	0.50	0.483	97	0.500	100	3.5
MTBE		<0.025	0.50	0.606	121	0.613	123	1.2
Sample results lister	d are on a wet weight basis for	calculation p	urposes.					
Surrogates			MS	MSD	MB	Method Blank		mg/Kg
	Dibromofluoromethane		124	114	121	Benzene		<0.025
	1,2-Dichloroethane-d4		134	133	126	Toluene		< 0.025
	Toluene-d8		92	92	86	Ethyl Benzene		< 0.025
	4-Bromofluorobenzene		115	118	115	Total Xylenes MTBE		<0.05 <0.025

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Tacoma, WA 98421

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April 30, 2016

Eastern Research Grp. Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151

Units:

mg/Kg

Spectra Project: Applies to Spectra #s 2016040548 3-11

Analyst:

SCI

### QUALITY CONTROL RESULTS

ICP-MS Metals - SW846 6020B - Soil/Solid

Method Blank

Date Digested: 4/30/2016 Date Analyzed:

4/30/2016

Element	CAS #	Blank Result
Arsenic	7440-38-2	< 0.2
Barium	7440-39-3	< 0.5
Cadmium	7440-43-9	< 0.2
Chromium	7440-47-3	< 0.5
Lead	7439-92-1	< 0.2
Selenium	7780-49-2	< 0.3
Silver	7440-22-4	< 0.2

Blank Spike (LCS)

Date Digested;

4/30/2016

Date Analyzed:

4/30/2016

	Spike	LCS	LCS	
Element	Added	Conc.	%Rec	
Arsenic	200.0	202.4	101.2	
Barium	200.0	199.8	99.9	
Cadmium	200.0	198.6	99.3	
Chromium	200.0	201.8	100.9	
1.ead	200.0	200.4	100.2	
Selenium	200.0	190.3	95.2	
Silver	200.0	190.1	95.1	

Comment: LCS diluted 1/20 for analysis

LCS Recovery limits 80-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 4/30/2016 Sample Spiked: 2016040548-3

Date Analyzed:

4/30/2016

	Sample	Spike	MS	MS	MSD	MSD	
Element	Conc.	Conc.	Canc.	%Rec	Conc	%Rec	RPD
Arsenic	16.85	200.0	260.60	121.9	266.20	124.7	2.3
Barium	28.80	200.0	258.80	115.0	266.20	118.7	3.2
Cadmium	0.64	200.0	211.80	105.6	210.60	105.0	0.6
Chromium	27.12	200.0	245.00	108.9	243.80	108.3	0.6
Lead	91.08	200.0	299.40	104.2	304,20	106.6	2.3
Selenium	0.53	200.0	212.80	106.1	203.00	101.2	4.7
Silver	1.00	200.0	210.60	104.B	214.80	106.9	2.0

Comment: Sample diluted 1/20 for analysis

Recovery Limits 70-130%

RPD Limit 20

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April 27, 2016

Eastern Research Group, Inc. 14555 Avion Parkway, Suite 200 Chantilly, VA 20151

Method:

SW846 7471B

Spectra Project:

2016040548

Applies to Spectra #'s 3-11

Sample Matrix:

Solid

MERCURY QUALITY CONTROL RESULTS

			MS/MSI	)			
Units:	mg/Kg				Date Anal	yzed:	4/27/16
		Spike					
	Sample	Amount	MS	%	MSD	%	
Spike Sample	Result	Added	Result	Recovery	Result	Recovery	RPD
2016040548-3	0.000	0.4000	0.420	105.0	0.410	102.5	2.4
Units	mg/Kg				Date Anal	yzed:	4/27/16
		Spike					
	Sample	Amount	MS	%			
Spike Sample	Result	Added	Result	Recovery			
LCS	<0.05	0.5000	0.513	102.6			
		MET	HOD BI	ANK		v. 1-1	e de la co
Units:	mg/Kg				Date Analy	yzed:	4/27/16
Moroum	~0.0s						
Mercury	< 0.05						

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May 2, 2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-Dx

Sample Matrix:

Water

Spectra Project:

2016040548

Applies to Spectra #: 1

## HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample:

040549-1

ug/L

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

Dup.

Spike

Spike Amount Amount

Percent

Spike Amount Percent

Found Recovery

% RPD

Compound

Sample Result

<100

Added Found Recovery

Diesel

Units:

2500

1652

66

1488

10.4

METHOD BLANK

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

60

Units:

ug/L

Diesel

<100

Heavy Oil

<500

Surrogate Recoveries:

p-terphenyl

107%

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May 2, 2016

Eeastern Research Grp. Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-Dx

Sample Matrix:

Soil

Spectra Project:

2016040548

Applies to Spectra #:

3-11

Units:

mg/Kg

## HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: 040548-9

Date Extracted:

4/27/2016

Date Analyzed:

5/1/2016

Dup.

Spike Sample Amount Compound Result Added

Spike Amount Found

Percent Recovery

Spike Amount Found

Percent Recovery

% RPD

Diesel

<10 125 77.1

62

70.9

57

8.4

BLANK SPIKE (LCS)

Date Extracted:

4/27/2016

Date Analyzed:

5/1/2016

Compound

Sample Result

Spike Amount Added

Spike Amount Found

Percent Recovery

Diesel

<10.0 125 80.8

64.64

METHOD BLANK

Date Extracted:

4/27/2016

Date Analyzed:

5/1/2016

Diesel

<10.0

mg/Kg

Heavy Oil

<50.0

mg/Kg

Surrogate Recovery:

p-terphenyl

98%

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May 31, 2016

Eastern Research Group 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-G

Sample Matrix:

Soil

Units:

mg/Kg dry wt.

Spectra Project:

2016040548

Applies to Spectra # 7 - 11

## HYDROCARBON ANALYSIS QUALITY CONTROL RESULTS

#### DUPLICATE

Duplicate Sample # 201640548-11

Date Analyzed:

4/27/2016

	Sample	Duplicate	
Compound	Result	Result	RPD
Gasoline	<5	<5	0

#### METHOD BLANK

Date Analyzed:

4/27/2016

WTPH-G

<5

Surrogate Recoveries:

Toluene-d8

100%

BFB

136%

SPECTRA LABORATORIES

2221 Ross Way, Tacoma, WA 98421 (253) 272-4850 Fax (253) 572-9838 SPECIAL INSTRUCTIONS/COMMENTS:

Hotel PEBs and PAHs with BTEX
And DRO Defor available

## **CHAIN OF CUSTODY**

1016040548

www.spectra-lab.com	n info@spec	etra-lab.co	om	Ret	urn	San	nple	s:	Y N			Pag	ge _	1		of	2	_	S	TA	NE	A	RD		1	1	RUS	SH		
CLIENT: GS	A		-	DDF	RES	S:																					1	CHAN		i
PROJECT:					1	HYDI	900	ARE	BONS			OR	GAI	NIC	s		ME	TAI	s	T				C	отн	ER				
CONTACT: MORKE	341655																													
SAMPLED BY: Pach	4 -	-		ERS	1	1								1			2													
PHONE: 491-345-75				CONTAINERS		1			Î			ENTS	-	1		BA8	ECIF	1A 8	ECIFY	1										
O-MAIL: MON- Briggs		Prefer FA	X		9	PHG			FOG)		AC	8260 CHLOR SOLVENTS	EMI VOA	NA	89	TOTAL METALS RCRA	TOTAL METALS (SPECIFY)	TOLP METALS RCRA 8	TCLP METALS (SPECIFY)	45	×		TN		SOLIDS (SPECIFY)					
PURCHASE ORDER #				BER	NWTPH-HCID	BTEX BTEX/NWTPH-G	9H-G	H-DX	1664 SGT-HEM ( 1664 HEM (FOG)		8260/624 VOA	몽	625 S	8270 PAH/PNA	8082/608 PCB	. MET	MET	META	META	PH 9040/9045	TX/TOX/EOX	TURBIDITY	H POI		S (SF					
SAMPLE ID	DATE	TIME	MATRIX	NUMBER	NWT	BTEX	NWTPH-G	NWTPH-Dx	1664		8260/	8260	8270-625 SEMI	8270	8082/	TOTA	TOTAL	TOLP	TCLP	PH 90	TXTC	TURB	FLASH POINT	800	SOLIC					
UST-3B	4/20/16	12:00	GW	6	,	1	1	1						1	1															
Trip Blank	4/20/16	12:00	Suil	1		/									1															
SB-IA		2.00		4	1	1		1	,					1	1			1	/				1							
5B-1B	4/20/16	2:15	Soil	4	1	1		1						1	1			1											1-1	
5B-2A	4/20/16	2:20	soil	4	1	1		1				9	1	1	1			1												
58-28		2:30		4		1		~						1	1		_	V		1										
GS-2A	4/20/16	2:40	suil	34	1	1	V	1						1	4			1												
G5-2B	4/20116	3:00	Sill	发		1	1	1						1	W			1												
GS-1A	4/20/16	3:15	3011	5		1	1	3						1	4			1	1											
G5-18	4/20116	3:20	ice	5		1	1	11						1	1			/												
LAB USE ONLY						SIC	NAT	URE					PF	RINT	ED NA	ME				CO	MPAN	IY.			DAT	TE.		TII	ME	
US Mail UPS Fed Ex Co	ourier Client	RELINQUISE	HED BY	I	2a	le	5	8	-			Po	اعد	he	15	tr	iv			E	RE	7		-	1/2	0	1	4-0	00	
Shipping Container: Box Envelope		RECEIVED I	100	2	on	wi8	N	E person	Th)	1	_	0	21	1	Sa	m	14	1	7-	5	200	to	1/2	4	20	16	i	41	00	
Tracking #		RELINQUIS	HED BY																											
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Cooler Temp. 2. 2 Sample	Temp. 6-7	Payment Ter attorney's fe																								uding	reaso	nable		

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## **CHAIN OF CUSTODY**

JOHO 40348

Return Samples: Y N Page 2 of 2 STANDARD

CLIENT: 65	A			ADE			-			IN	4								_	_			-	-					DRESS
PROJECT:	>/\							oc	ARB	ONS			OR	GA	NIC	S		ME	TAL	s					(	тн	ER		Travel.
CONTACT: MOVEBY		10		RS																									
PHONE: 984-345-75	FAX:	Profes EA	x 🗀	CONTAINERS					WOOD.	(1)			DLVENTS	VOA			HORA 8	(SPECIFY	HCHA 8	OFECIFT)						EV)			
PURCHASE ORDER #	swerz	. ore-MAI	L	14	NWTPH-HCID		BTEX/NWTPH-G	9H-G	NWTPH-Dx	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270-625 SEMI VOA	8270 PAH/PNA	909 103	TOTAL METALS RCRA	TOTAL METALS (SPECIFY)	TCLP METALS HCRA 8	MEINICH	PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT		SOLIDS (SPECIFY)			
SAMPLE ID	DATE	TIME	MATRIX	NOW	NWT	BTEX	BTEX	NWTPH-G	TWN	1664		8260/	8260	8270-	8270	2909	TOTAL	TOTAL	TOLP	107	PH 90	TXTO	TURB	FLAS	BOD	SOLIE			
GS-IADUP	4/20/16	3:15	sail	5		V		1	1				,	1	1	-			1										
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LAB USE ONLY							SIGN	ATU	RE					PF	INTE	D NA	ME				COM	PAN	Y			DAT	E		TIME
US Mail UPS Fed Ex Couri	er Client	RELINQUISH	HED BY	9	20	w	h	08	-	N		1	20	d	لع	St	mi	Y			EP	LG	1		-	1/2	0		1:00
Cooler Box Envelope N	Vone	RECEIVED E		a	Ya.	45	K	dia	a)	Men	-	4	or	1	H	200	1/	10	2	-	Sp	ec	tr	4	4	10	16 X	9	1:00
Tracking # Intact	t Y N	RECEIVED E	BY													_													
Cooler Temp 2.2 Sample Ter		Payment Ter attorney's fee	ms: Net 3	0 day	rs. Pa	est di	ue ac	cour	its su	bject to	1 1/ whe	2% p	er m	onth	inte	rest.	Custo	mer WA	agree	s to p	ay all	cos	s of	colle	ction	inclu	iding re	ason	able

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Cooler Temp. 2. 2 Sample Temp. 6.7

SPECIAL INSTRUCTIONS/COMMENTS:

Hotel ACBS and PAHS with BTEX And DRO Defor available

## CHAIN OF CUSTODY

2016040548

STANDARD RUSH Return Samples: Y N ADDRESS GSA CLIENT: ADDRESS: CHANGE PROJECT: **HYDROCARBONS** ORGANICS METALS OTHER CONTACT: MORE BRIGGS CONTAINERS SAMPLED BY: RECOLU STAIT TOTAL METALS (SPECIFY) TOLP METALS (SPECIFY) 8280 CHLOR SOLVENTS TOTAL, METALS RCRA 8 TOLP METALS RCHA 8 PHONE: 981-345-7575 FAX: 1664 SGT-HEM (TPH) 8270-625 SEMI VOA SOLIDS (SPECIFY) 1884 HEM (FOG) BTEX/WWTPH-G B-MAIL: MENT BYGGS DEVO . LOM OF BMAIL 8270 PAHIPNA NUMBER OF 8082/608 PCB NWTPH-HCID 8260/624 VOA FLASH POINT PH 9040/9045 TX/TOX/ECX TURBIDITY NWTPH-Dx NWTPH-G PURCHASE ORDER # BTEX DATE BOD TIME SAMPLE ID SAMPLED SAMPLED UST-3B Soil TIMP Blank 4/20/16 1200 4/2914 2:00 501 SB-IA 5B-1B 4/20/16 2:15 | 5011 4/20/16 2:20 50:1 5B-2A 4/20/14 2:30 5B-2B 65-ZA 4/10/14 2:40 Sal B 65-2B 4/2011 3:00 sil GS-IA 4/20116 3:15 3011 G5-1B 4/20/14 3:20 501 COMPANY LAB USE ONLY SIGNATURE PRINTED NAME DATE TIME pachel Stair 4:00 **FIELINGUISHED BY** US Mail UPS Fed Ex Courie Client Shipping Container: RECEIVED BY 4100 Cooler Box Envelope None RELINCUISHED BY Tracking # Custody Seals: (N ) Intact: Y N RECEIVED BY Payment Terms: Net 30 days, Past due accounts subject to 1 1/2% per month Interest. Customer agrees to pay all costs of collection including reasonable

attorney's fees and all other costs of collection regardless of whether sult is filled in Pierce Co., WA venue. Spectra Laboratorius, LLC

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Cooler Temp 2.2 Sample Temp 6-7

1	SPECIAL	INST	RUCT	IONS/COM	MEN	TR
-1	DI EURIL	HAPL		TOTAL COL	10700 E-3 W	1.0

## CHAIN OF CUSTODY

104040748

www.spectra-lab.com info@spectra-lab.com STANDARD RUSH Page 2 of 2 Return Samples: Y N **ADDRESS** GSA CLIENT: ADDRESS: CHANGE HYDROCARBONS **ORGANICS METALS** OTHER PROJECT: CONTACT: MOVE-BYIGGS SAMPLED BY: Rachul Striv TOTAL METALS (SPECIFY) TOLP METALS (SPECIFY) 8280 CHLOR SOLVENTS TOLP METALS RORA B PHONE: 989 -345-75 FAX: TOTAL METALS HORA 1864 SGT-HEM (TPH) 8270-625 SEMI VOA SOLIDS (SPECIFY) Prefer FAX BTEXNWTPH-G 1684 HEM (FOG) O-MAIL: MONKEBMSSS Werz. or e-MAIL 등 8270 PAH/PNA 8082/808 PCB FLASH POINT NWTPH-HCID 8280/624 VDA PH 9040/9045 TX/TOX/EOX NWTPH-Dx TURBIDITY NWTPH-B PURCHASE ORDER # 900 TIME MATRIX SAMPLE ID SAMPLED SAMPLED 4/29/14 3:15 GS-IADUP Sal 10 SIGNATURE PRINTED NAME COMPANY LAB USE ONLY DATE TIME 4:00 RELINQUISHED BY Fed Ex (Courier) Client US Malt UPS Shipping Containur: RECEIVED BY Coole Box Envelope None RELINQUISHED BY Tracklen 8 RECEIVED BY Custody Seals: Y N Intact: Y N

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer egrees to pay all costs of collection including reasonable

attorney's fews and all other costs of collection regardless of whether sult is filled in Pierce Co., WA venue. Spectra Laboratories, LLC

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04/29/2016

Eastern Research Grp, Inc. 14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Project: Client ID: GSA UST-2B

Sample Matrix: Water

Date Sampled: 04/20/2016 Date Received: 04/20/2016

Spectra Project: 2016040549

Spectra Number: 1

Analyte	Result	Units	Method
Diesel	<100	μg/L	NWTPH-D
Oil	<500	μg/L	NWTPH-D
Benzene	<1.0	μg/L	SW846 8260C
Ethylbenzene	<1.0	μg/L	SW846 8260C
Methyl-tert-Butyl Ether	<1.0	μg/L	SW846 8260C
Toluene	<1.0	μg/L	SW846 8260C
Total Xylenes	<2.0	μg/L	SW846 8260C

Surrogate	Recovery	Method
p-Terphenyl	69	NWTPH-D
Toluene-d8	92	SW846 8260C
4-Bromofluorobenzene	125	SW846 8260C

#### SPECTRA LABORATORIES

April 28, 2016

Eastern Research Group 14555 Avion Parkway, Ste 200 Chantilly, VA 20151-1102 Sample Matrix: Water
EPA Method: EPA 624/8260C
Spectra Project: 20160040549
Date Analyzed: 4/22/2016
Units: ug/L

Onits: ug/L Applies to: #1 Spiked Sample: 2016040549-1

#### BTEX by Method 624/ 8260C Matrix Spike/ Matrix Spike Duplicate Results

COMPOUND	SAMPLE RESULT	SPIKE	MS RESULT	% REC	MSD RESULT	DUP %REC	nnn
Benzene	<1.0	10.0	10.67	107	10.63	106	RPD 0.4
Toluene	<1.0	10.0	8.77	88	8.88	89	1.2
Ethylbenzene	<1.0	10.0	9.18	92	9.60	96	4.5
m,p-xylenes	<2.0	20.0	18.31	92	18.92	95	3.3
o-xylene	<1.0	10.0	9.58	96	10.19	102	6.2
MTBE	<1.0	10.0	10.54	105	10.22	102	3.1

Surrogates		MS	MSD	MB	Method Blank	ug/L
	Dibromofluoromethane	120	110	118	Benzene	<1.0
	1,2-Dichloroethane-d4	125	125	125	Toluene	<1.0
	Toluene-d8	95	97	93	Ethyl Benzene	<1.0
	4-Bromofluorobenzene	121	121	127	m,p-Xylenes	<2.0
					o-Xylenes	<1.0
					MTBE	<1.0

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April 30, 2016

Eastern Research Grp, Inc.

14555 Avion Parkway, Suite 200

Chantilly, VA 20151-1102

Method:

NWTPH-Dx

Sample Matrix:

Water

Spectra Project:

2016040549

Applies to Spectra #: 1

## HYDROCARBON ANALYSIS

QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Units:

2016040549-1

ug/L

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

Dup. Spike

Spike Amount Amount

Spike

Percent Recovery Amount Percent Found Recovery

% RPD

Compound

Diesel

Result

Sample

<100

Added

2500

Found

1652

66

1488

60

10.4

#### METHOD BLANK

Date Extracted:

4/26/2016

Date Analyzed:

4/28/2016

Units:

ug/L

Diesel

<100

Heavy Oil

<500

Surrogate Recoveries:

p-terphenyl

107%

SPECTRA LABORATORIES

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SPECIAL INSTR	UCTIONS/COMM	MENTS:	
Sample	UST-28	Inductor	CYTRA
200	1 100	c IMST	
Hold Po	Bs and Pr	9HS VANTIL	1 of 1
Return Sam	ples: Y N	Page	1 of 1

**CHAIN OF CUSTODY** 

WILEOHOSIG

STANDARD 🗸

RUSH

CLIENT: GSA				ADD	HE	SS:							_	_			-			-		-	_	_						CHAN	IGE -
PROJECT:					L	HY	DR	OC	ARE	301	NS	L	OF	RG/	ANI	CS	4	-	ME	TAL	S	L				(	ЭТН	ER	-		_
CONTACT: MWKE	mass						1					П										Н									
SAMPLED BY: Poch	el Star			CONTAINERS									co						3	5		П									
PHONE: 989-345-75	S FAX:			NTAIL					1	Ŧ			VENT	A			1	CHA 8	PECI	HAB	3						-				
e-MAIL: MOVE-Briggs		Prefer FA or e-MAIL	×	OF CO	90		BTEX/NWTPH-G			1864 SGT-HEM (TPH)	1664 HEM (FOG)	OA	8280 CHLOR SOLVENTS	8270-625 SEMI VOA	NA	CB		TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TOLP METALS RORA 8	10 0	945	×		LN		SOLIDS (SPECIFY)				
PURCHASE ORDER #				BEH	H.		LWN.	3HG	A F	-LDS	EM	624 V	CHLO	625 S	PAHIF	808 P	1	ME	ME	ME	MED	40/90	XVEO	TIO	H PO		S (SI				
SAMPLE ID	DATE SAMPLED	TIME	MATRIX	NUMBER	NWTPH-HCID	BTEX	BTEX	NWTPH-G	NWTPH-Dx	1884	1664	8260/624 VOA	8280	8270-	8270 PAH/PNA	8082/608 PCB		TOTA	TOTA	TOLP	3	PH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT	BOD	SOLIE				
VST-28 *	4/2011	10:30	GW	18		/			1						1	1															
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LAB USE ONLY							SIGN	ATUI	RE	_		_		P	RIN	TED	NAM	E		_	_	COM	PAN	Y			DAT	TE	_	TIM	JE J
US Mail UPS Fed Ex Co	urier Client	RELINQUISH	ED BY	4	4	1	4	S		U	,		R						ir							4	-	0/16	,	4:0	
Shipping Container: Box Envelope		RECEIVED B	Y	2	00	S	1	To the same	us	THE PROPERTY OF		1	01	1	4	44	m/	14	m	, ,	5	rei	de.	_				2-16		42	
Tracking #		RELINQUISH	ED BY	-		-															1										
Custody Seals: Y V Int	act: Y N	RECEIVED B	Y																												



Section: Appendix E Revision Number: 0 Revision Date: 6/10/16 Page: 1 of 5

# APPENDIX E BASIS FOR MTCA CLEANUP LIMITS



Table E-1. Site Soil Cleanup Standards <sup>a</sup>

			Α	В	С	D	E	F	G	Н		J
			Method A Cleanup Standard for	State or Federal	Natural					Human Toxicity- based Cleanup	Human Toxicity- based Cleanup	Wildlife Toxicit
		Method A Soil	Industrial	Cleanup	Background					Level for Non-	Level for	based Cleanup
		Cleanup Level	Properties	Standard	Level (mg/kg)	PQL	Carcinogenic	Oral RfD	Oral CPF <sup>2</sup>	Carcinogens	Carcinogens	Level
Category	Analyte	(mg/kg)	(mg/kg) <sup>1</sup>	(mg/kg) <sup>2</sup>	b	(mg/kg) c	(Yes or No) <sup>2</sup>	(mg/kg*day) <sup>2</sup>	(mg/kg*day) <sup>-1</sup>	(mg/kg) <sup>3</sup>	(mg/kg) <sup>4</sup>	(mg/kg) <sup>5</sup>
0 /	Diesel	2.00E+03	2.00E+03	1.00E+02	1.00E+01	, o, o,	,					
ТРН	Oil	2.00E+03	2.00E+03	1.30E+03	5.00E+01 <sup>g</sup>	5.00E+01	Per Reference 6	(page 6), when us	ing Method A at an i		alues from Table	745-1 should b
	GRO	3.00E+01	3.00E+01	8.00E+02	5.00E+00 <sup>g</sup>	5.00E+00			used	d.		
PCBs	PCBs	9.40E-01	1.00E+01	9.40E-01	1.0E-02 g	3.002.00	Yes		2.00E+00	T .	6.56E+01	2.00E+00
r CB3	Arsenic	6.50E+00	2.00E+01	3.00E+00	6.50E+00		Yes	3.00E-04	1.50E+00	1.05E+03	8.75E+01	2.00E+00 2.00E+01
	Barium	1.32E+03	2.00E+01	2.20E+05	5.11E+01		No	2.00E-01	1.302+00	7.00E+05	8.73E+01	1.32E+03
	Cadmium	2.00E+00	2.00E+00	9.80E+03	4.00E-01	-	No	1.00E+03		3.50E+09	_	3.60E+01
1	Chromium VI	3.13E+00	1.90E+01	6.30E+00	- 4.002 01		Yes	3.00E-03	4.2E+01 <sup>e</sup>	1.05E+04	3.13E+00	3.002.01
RCRA 8 Metals	Chromium III	2.00E+03	2.00E+03	1.80E+06	1		No	1.50E+00	4.21+01	5.25E+06	3.13E+00	
INCINA 6 IVIETAIS	Lead	2.20E+02	1.00E+03	8.00E+02	1.45E+01		INO	Note d		J.23L100		2.20E+02
	Selenium	1.00E+00	-	5.80E+03	1.43E+01		No	5.00E-03		1.75E+04		8.00E-01
	Silver	3.90E+03		3.90E+03	7.00E-01		No	5.00E-03	-	1.75E+04		No value f
	Mercury	2.00E+00	2.00E+00	4.60E+01	5.00E-01		No	- -		1.73E+04		9.00E+00
	† ·		3.00E-02		2.50E-02 <sup>g</sup>				5.50E-02		2 205 : 02	3.00E+00
11	Benzene	3.00E-02		5.10E+00		-	Yes				2.39E+03	
	Ethylbenzene	6.00E+00	6.00E+00	2.50E+01	2.50E-02 <sup>g</sup>		Yes	-	1.10E-02		1.19E+04	-
BTEX	МТВЕ	1.00E-01	1.00E-01	2.10E+03	2.50E-02 <sup>g</sup>	-	Yes		1.80E-03	-	7.29E+04	-
1.	Toluene	7.00E+00	7.00E+00	4.70E+04	2.50E-02 <sup>g</sup>	-	No	8.00E-02	-	2.80E+05	-	-
	Xylenes	9.00E+00	9.00E+00	2.50E+03	5.00E-02 <sup>g</sup>	-	No	2.00E-01		7.00E+05		-
	1-Methylnaphthalene	7.30E+01	- 1	7.30E+01	3.30E-03	-	Yes	7.00E-02	2.90E-02	2.45E+05	4.53E+03	-
11 5	1,2,4-Trichlorobenzene	1.10E+02	- (	1.10E+02	-	- 1	No	1.00E-02		3.50E+04	-	-
1	1,2-Dichlorobenzene	9.30E+03		9.30E+03	-	-	No	9.00E-02		3.15E+05	-	-
	1,3-Dichlorobenzene	8.30E-02	- 1	-	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-	-			-
	1,4-Dichlorobenzene	1.10E+01	- 1	1.10E+01		- 1	Yes		5.40E-03		2.43E+04	-
	2,4,5-Trichlorophenol	8.20E+04	+	8.20E+04	-		No	1.00E-01		3.50E+05	-	-
	2,4,6-Trichlorophenol	2.10E+02	- 1	2.10E+02	-	-	Yes	-	1.10E-02	-	1.19E+04	-
	2,4-Dichlorophenol	2.50E+03	- 1	2.50E+03	-	-	No	3.00E-03	-	1.05E+04	-	-
	2,4-Dimethylphenol	1.60E+04	- 1	1.60E+04	-	-	No	2.00E-02	-	7.00E+04	-	-
	2,4-Dinitrophenol	1.60E+03		1.60E+03	-	-	No	2.00E-03	-	7.00E+03		-
	2,4-Dinitrotoluene	7.40E+00		7.40E+00		-	Yes	-	3.10E-01		4.23E+02	-
	2,6-Dinitrotoluene	1.50E+00	- 1	1.50E+00	-		Yes		1.50E+00	- 2 205 25	8.75E+01	-
	2-Chloronaphthalene	6.00E+04		6.00E+04	-	-	No	8.00E-02		2.80E+05	-	-
100	2-Chlorophenol	5.80E+03	- 1	5.80E+03	2 205 02	-	No	5.00E-03		1.75E+04	-	ļ
	2-Methylnaphthanlene	3.00E+03		3.00E+03	3.30E-02		No	4.00E-03		1.40E+04		-
	2-Methylphenol	8.30E-02	-	-	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-		-	-	-
	2-Nitroaniline	8.00E+03	-	8.00E+03	-		No	1.00E-02	-	3.50E+04	-	-
	2-Nitrophenol	8.30E-02		-	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-	-	-		
	3,3-Dichlorobenzidine	5.10E+00	- 11	5.10E+00			Yes		4.50E-01		2.92E+02	-
	3-Nitroaniline	8.30E-02		-	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-	-	-		-
. 1	4,6-Dinitro-2-Methylphenol	0.33	ш 1	-	3.30E-01 <sup>g</sup>	3.30E-01	Unknown					
1 6	4-Bromophenyl-phenylether	0.083			8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-	-			-
1 4	4-Chloro-3-Methylphenol	8.30E-02			8.30E-02 <sup>g</sup>	8.30E-02	Unknown					

Category	Analyte	Method A Soil Cleanup Level (mg/kg)	Method A Cleanup Standard for Industrial Properties (mg/kg) <sup>1</sup>	State or Federal Cleanup Standard (mg/kg) <sup>2</sup>	Natural Background Level (mg/kg)	PQL (mg/kg) <sup>c</sup>	Carcinogenic (Yes or No) <sup>2</sup>	Oral RfD (mg/kg*day) <sup>2</sup>	Oral CPF <sup>2</sup> (mg/kg*day) <sup>-1</sup>	Human Toxicity- based Cleanup Level for Non- Carcinogens (mg/kg) <sup>3</sup>	Human Toxicity- based Cleanup Level for Carcinogens (mg/kg) <sup>4</sup>	Wildlife Toxicity based Cleanup Level (mg/kg) <sup>5</sup>
category	4-Chloroaniline	1.10E+01	-	1.10E+01	-	- (1116/116/1	Yes	-	2.00E-01	-	6.56E+02	-
	4-Chlorophenyl-phenylether	8.30E-02			8.30E-02 <sup>g</sup>	8.30E-02	Unknown		-		0.502.02	1
					-							-
	4-Methylphenol	8.30E-02			8.30E-02 <sup>g</sup>	8.30E-02	Unknown		-	-		-
	4-Nitroaniline	1.10E+02		1.10E+02		-	Yes	-	2.00E-02	-	6.56E+03	-
	4-Nitrophenol	8.30E-02	-	-	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	-	-	-	-	
	Acenaphthene	4.50E+04	11 - 1	4.50E+04	3.30E-02	- 1	No	6.00E-02	-	2.10E+05	-	No value <sup>†</sup>
	Acenaphthylene	1.00E-01		-	1.00E-01	3.30E-02	Unknown		-	-	-	
	Aniline	4.00E+02		4.00E+02			Yes	-	5.70E-03		2.30E+04	- 1
	Anthracene	2.30E+05	- 1	2.30E+05	-	-	No	3.00E-01		1.05E+06	- 1	
	Azobenzene	2.60E+01		2.60E+01	-		Yes	-	1.10E-01	-	1.19E+03	-
	Benzidine	1.00E-02	10 11	1.00E-02			Yes		2.30E+02		5.71E-01	-
	Benzo(a)Anthracene	2.90E+00	12 21	2.90E+00	3.30E-02	- 1	Yes		7.30E-01		1.80E+02	-
	Benzo(a)Pyrene	2.90E-01	2.00E+00	2.90E-01	3.30E-02	- :	Yes		7.30E+00		1.80E+01	3.00E+02
PAHs / Semi-	Benzo(b)Flouranthene	2.90E+00	- 1	2.90E+00	1.00E-01	- 1	Yes	-	7.30E-01	-	1.80E+02	
Volatiles	Benzo(ghi)Perylene	1.00E-01	-	-	1.00E-01	3.30E-02	Unknown					-
	Benzo(k)Flouranthene	2.90E+01		2.90E+01	1.00E-01		Yes		7.30E-02	-	1.80E+03	
	Benzoic Acid	3.30E+06		3.30E+06	-		No	4.00E+00	-	1.40E+07		
	Benzyl Alcohol	8.20E+04		8.20E+04	-	- 1	No	1.00E-01	-	3.50E+05		-
	Biphenyl	2.00E+02		2.00E+02	-		No	5.00E-01		1.75E+06	-	-
	Bis(2-Chloroethyl)Ether	1.00E+00		1.00E+00	-	- 1	Yes	- 1	1.10E+00	-	1.19E+02	-
	Butylbenzylphthalate	1.20E+03		1.20E+03		- 1	Yes		1.90E-03	-	6.91E+04	-
	Carbazole	3.32E-01		-	3.32E-01	8.30E-02	Unknown					-
	Chrysene	2.90E+02		2.90E+02	1.32E-01		Yes	-	7.30E-03	-	1.80E+04	-
	Di-n-Butylphthalate	8.20E+04	1	8.20E+04			No	1.00E-01		3.50E+05		No value f
	Di-n-Octyl Phthalate	8.20E+03		8.20E+03		. 1	No	1.00E-02		3.50E+04		
	Dibenz(a,h)Anthracene	2.90E-01		2.90E-01			Yes		7.30E+00		1.80E+01	
	Dibenzofuran	1.00E+03		1.00E+03			No	1.00E-03		3.50E+03		1
	Dibenzothiophene	1.20E+04		1.20E+04	_		No	1.00E-02		3.50E+04		
	Diethylphthalate	6.60E+05		6.60E+05	_		No	8.00E-01		2.80E+06		
	Dimethyl Phthalate	8.30E-02		0.002.00	8.30E-02 <sup>g</sup>	8.30E-02	Unknown	0.002 02		2.002.00		-
	Fluoranthene	1.00E-01		3.00E-04	1.00E-01	0.3UE-UZ	No	4.00E-02		1.40E+05		
	Fluorene	1.00E-01		3.00E-04 3.00E-04	1.00E-01	-	No	4.00E-02	-	1.40E+05		
	Hexachlorobenzene	9.60E-01		9.60E-01	1.00E-01		Yes	8.00E-02	1.60E+00	2.80E+03	8.20E+01	3.10E+01
		5.30E+00		5.30E+00			Yes			+	1.68E+03	3.10E+01
	Hexachlorobutadiene	7.50E+00		7.50E+00			No	2.20E-05 6.00E-03	7.80E-02	7.70E+01 2.10E+04	1.08E+03	
	Hexachlorocyclopentadiene	8.00E+00					Yes	7.00E-04	4.00E-02	2.45E+03	3.28E+03	-
	Hexachloroethane	2.90E+00		8.00E+00 2.90E+00	3.30E-02	- 0	Yes	7.00E-04	7.30E-01	2.45E+U3	3.28E+03 1.80E+02	+ -
	Indeno(1,2,3-cd)Pyrene				3.30E-02			2.005.04		7.005.05	-	
	Isophorone	2.40E+03		2.40E+03			Yes	2.00E-01	9.50E-04	7.00E+05	1.38E+05	_
	N-Nitroso-Di-n-Propylamine	3.30E-01		3.30E-01	-		Yes	-	7.00E+00	-	1.88E+01	-
	N-Nitrosodiphenylamine	4.70E+02		4.70E+02	-		Yes		4.90E-03	2.005.01	2.68E+04	
	N-nitrosodimethylamine	3.40E-02		3.40E-02	-		Yes	8.00E-06	5.10E+01	2.80E+01	2.57E+00	
	Naphthalene	5.00E+00	5.00E+00	1.70E+01	-	- 1	Yes	2.00E-02	1.19E-01 <sup>e</sup>	7.00E+04	1.10E+03	-
	Nitrobenzene	2.20E+01		2.20E+01			Yes	2.00E-03	1.40E-01 <sup>e</sup>	7.00E+03	9.38E+02	
	Pentachlorophenol	4.00E+00		4.00E+00			Yes	5.00E-03	4.00E-01	1.75E+04	3.28E+02	1.10E+01

Category	Analyte	Method A Soil Cleanup Level (mg/kg)		State or Federal Cleanup Standard (mg/kg) <sup>2</sup>	Natural Background Level (mg/kg)	PQL (mg/kg) <sup>c</sup>	Carcinogenic (Yes or No) <sup>2</sup>	Oral RfD (mg/kg*day) <sup>2</sup>	Oral CPF <sup>2</sup> (mg/kg*day) <sup>-1</sup>	Human Toxicity- based Cleanup Level for Non- Carcinogens (mg/kg) <sup>3</sup>	Human Toxicity- based Cleanup Level for Carcinogens (mg/kg) <sup>4</sup>	
	Phenanthrene	1.00E-01			1.00E-01	3.30E-02	Unknown	-	-		-	-
	Phenol	2.50E+05		2.50E+05			No	3.00E-01	-	1.05E+06		-
	Pyrene	2.30E+04		2.30E+04	3.30E-02		No	3.00E-02		1.05E+05		-
	Pyridine	1.20E+03	- 11	1.20E+03	-	- 1	No	1.00E-03	-	3.50E+03	-	-
	Tetrachlorophenol	2.50E+04		2.50E+04	-		No	3.00E-02	-	1.05E+05		-
	Bis(2-Chlroethoxy)Methane	2.50E+03	1	2.50E+03	-	- 1	No	4.00E-02		1.40E+05	-	-
	bis(2-Ethylhexyl)Phthalate	1.60E+02		1.60E+02		- (	Yes	2.00E-02	1.40E-02	7.00E+04	9.38E+03	No value <sup>f</sup>
	bis(2-chloroisopropyl)ether	8.30E-02			8.30E-02 <sup>g</sup>	8.30E-02	Unknown					

#### Notes:

- a) This table was developed in accordance with the Method A approach discussed in Reference 7, including Figure 3 of that document.
- b) Natural background levels established using site data in accordance with Reference 3.
- c) PQL's established based on laboratory data. When PQL's for the same analysis varied between samples, a single value is presented in this table for simplicity. The lowest PQL (most stringent) is shown.
- d) Per the EPA regional screening level user guide (Reference 8), EPA has not established an RfD or CPF for lead and recommends a residential soil screening level of 400 mg/kg. This screening level (400 mg/kg) was not used as it is less stringent than the level established in Reference 5 (220 mg/kg).
- e) Reference 6 includes some compounds for which values are not yet established. Values may be established via bioassays, which may or may not result in more stringent MTCA's that would apply to the site. Alternatively, the need for a TEE can be avoided through the use of instituational controls that limit wildlife exposure pathways (e.g., paving areas of known contamination).
- f) Reference 2 includes some compounds for which CPF values are not provided. CPF values associated with this footnote were calculated based on IUR values from Reference A, using the following equation: CPF = 1000\*(body mass in kg)\*IUR / (daily inhalation rate in mg/day). A body mass of 70 kg and an inhalation rate of 20 m3/day was assumed. This formula conservatively assumes that 100% of the inhaled compound is absorbed into the g) Backup calculations for these values are not provided in Appendix F as every result for this analyte was the same value. Therefore, the 50% value and the 90% value are equivalent to that result.

Green Highlight and bold text = Basis for selected Method A Soil Cleanup Level

#### References:

- 1) Tables, WAC 173-340-900, Table 745-1 Method A Soil Cleanup Levels for Industrial Properties
- 2) EPA nationwide regional screening levels tables ("composite table") downloaded from https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2015.
- 3) Methods for Defining Background Concentrations. WAC 173-340-709.
- 4) Soil cleanup standards for industrial properties .WAC 173-340-745. Equation 745-1
- 5) Soil cleanup standards for industrial properties .WAC 173-340-745. Equation 745-2
- 6) Tables, WAC 173-340-900, Table 749-2 Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation
- 7) Focus on Developing Soil Cleanup Standards under the Model Toxics Control Act, Publication 01-09-071, Revised April 2005. (See Figure 3, Establishing Method A Soil Cleanup Levels under WAC 173-340-740(2) and 745(3).)
- 8) EPA users quide for regional screening levels. https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide-november-2015. Website accessed on 5/15/2016.

#### Acronvms

CPF = cancer potency factor, PCBs = Polychlorinated biphenyls, PQL = Practical Quantitation Level , RfD= Reference Dose (Oral), TEE = Terrestrial Ecological Evaluation

Table E-2. Site Groundwater Cleanup Levels

		Α	В	С
	Method A Groundwater Cleanup Level (ug/L)	Method A Cleanup Levels for Groundwater (ug/L) 1	State or Federal Cleanup Standard (ug/L) <sup>2</sup>	Surface Water Cleanup Level (ug/L) <sup>5</sup>
Diesel	5.00E+02	5.00E+02	-	-
Oil	5.00E+02	5.00E+02	-	-
Benzene	5.00E+00	5.00E+00	5.00E+00	-
Ethylbenzene	7.00E+02	7.00E+02	7.00E+02	-
MTBE	2.00E+01	2.00E+01	-	-
Toluene	1.00E+03	1.00E+03	1.00E+03	-
Xylenes	1.00E+03	1.00E+03	1.00E+04	-

#### Notes:

- a) This table was developed in accordance with the Method A approach discussed in Reference 3.
- b) EPA has not established a screening level for MTBE in groundwater. EPA's screening level for MTBE in tapwater is conservatively used in this table.
- c) This table does not include surface water cleanup levels as there is no potential for contamination to reach surface water.

**Green Highlight and bold text = Basis for selected Method A groundwater cleanup level** 

#### References:

- 1) Tables, WAC 173-340-900, Table 720-1 Method A Cleanup Levels for Groundwater
- 2) Values are federal maximum contaminant level (MCL) requirements obtained from EPA nationwide regional screening levels tables ("composite table") downloaded from https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2015.
- 3) Focus on Developing Groundwater Cleanup Standards under the Model Toxics Control Act, Publication 01-09-049, Revised April 2005.

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# APPENDIX F CALCULATION OF NATURAL BACKGROUND LEVELS



Table F-1. Supporting Calo	Table F-1. Supporting Calculations for Natural Background Levels <sup>a</sup>																								
									1-Methyllaphthalene	2-Methymaphthalen	Acenaphthene b	<sup>Acenaphth</sup> Vene <sup>5</sup>	Benzola/Anthracens	Benzo(a)preneb	BenzolbJrluorantho.	Benzolehijpervens	Benzolk)Fluoranther		98	heneb	90	Indeno(1,2,3-cd)pyre	hreneb		/
Data Point	TPH-DRO	Arsenic	Barium	Cadmium	/ pean	Selenium	Silver	Mercury	1-Methy	2-Methy	Acenapt,	Acenapt	Benzo(a,	Benzo(a)	Benzolb	Benzo(g)	Benzolk	Carbazole	Chrysenet	Fluoranthene	Fluorene	Indeno(	Phenanthrene <sup>5</sup>	Pyrene	/
1	10	1.9	13.7	0.2	1.1	0.3	0.2	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.083	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	
2	10	2.2	20.5	0.2	1.3	0.3	0.2	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.083	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	
3	10	2.2	23.2	0.2	1.4	0.3	0.3	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.083	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	6
4	10	2.8	23.2	0.2	1.5	0.3	0.3	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.083	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	
5	10	2.9	27.4	0.2	1.7	0.3	0.3	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.083	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	
6	10	3.0	28.6	0.2	1.7	0.3	0.4	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033	0.0044	0.0033	0.0033	0.083	0.0048	0.0033	0.0033	0.0033	0.0033	0.0033	
7	10	3.0	28.8	0.2	1.9	0.3	0.4	0.05	0.0033	0.0033	0.0033	0.0033	0.0033	0.0042	0.0116	0.0086	0.0083	0.083	0.0054	0.0045	0.0033	0.0078	0.0033	0.0033	
8	10	3.0	29	0.2	2	0.3	0.4	0.05	0.0033	0.0033	0.0033	0.0033	0.0064	0.015	0.0226	0.0107	0.0121	0.083	0.0229	0.0179	0.0033	0.0091	0.0082	0.0138	4
9	10	3.2	29.4	0.2	2.2	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.083	0.033	0.033	0.033	0.033	0.033	0.033	4
10	10	4.1	30.1	0.2	2.3	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.083	0.033	0.033	0.033	0.033	0.033	0.033	4
11	10	4.2	31.5	0.2	2.4	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.083	0.033	0.033	0.033	0.033	0.033	0.033	1
12	10	4.2	34.1	0.2	3.2	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.083	0.033	0.033	0.033	0.033	0.033	0.033	1
13	10	4.2	35.5	0.2	3.3	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.085	0.033	0.033	0.033	0.033	0.033	0.033	4
14	10	4.6	37.4	0.2	4.1	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.088	0.033	0.033	0.033	0.033	0.033	0.033	4
15	10	4.6	37.6	0.2	4.3	0.3	0.4	0.05	0.1	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033		0.033	0.033	0.033	0.033	0.033	0.033	4
16		4.7	41.5	0.2	4.6	0.4	0.4	0.05		0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033		0.033	0.033	0.033	0.033	0.033	0.033	1
17		5.1	42.2	0.2	5.4	0.5	0.5	0.05		0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033		0.033	0.033	0.033	0.033	0.033	0.033	4
18		5.3	42.9	0.2	6.0	0.5	0.5	0.05		0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	-	0.033	0.033	0.033	0.033	0.033	0.033	
19		5.5	43.4	0.2	6.2	0.8	0.5	0.05		0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033		0.033	0.033	0.033	0.033	0.033	0.033	ł
20		5.8	44.8	0.2	7.2	0.8	0.6	0.05		0.033	0.033	0.033	0.033	0.033	0.06	0.033	0.039		0.066	0.056	0.033	0.033	0.033	0.048	1
21		5.9	45.2	0.2	7.7	0.9	0.6	0.05		0.033	0.033	0.033	0.1	0.1	0.1	0.033	0.1		0.1	0.1	0.033	0.033	0.1	0.1	1
22		6.4	45.9	0.2	8.4	1	0.6	0.05		0.033	0.04	0.033	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.033	0.1	0.1	0.1	
23	1	6.5	46.0	0.3	8.8	1	0.6	0.05		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	k .
24	1	6.7	48.1	0.3	11.4	1	0.7	0.05		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	1
26		7.1	49.5	0.4	14.5	1.3	-	0.05		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1		0.1	
27	*	15.0 16.2	51.1 52.9	0.4	15.0 17.0	1.7	0.8	0.05	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	0.1	0.1	0.1	0.1	0.1	0.1	
28		16.2	59.6	0.4	42.2	2.4	1.1	0.05		0.1	0.1	0.1	0.252	0.244	0.324	0.1	0.262	V	0.314	0.420	0.1	0.1	0.384	0.745	
29	+	16.8	211	0.4	91.1	2.4	1.1	0.05		0.1	0.1	0.1	0.361	0.244	0.595	0.194	0.408	-	0.444	0.420	0.1	0.236	0.753	1.24	
	10.0				_	_		+	0.040		-	_			1			0.004	-						
Mean (all data)	10.0	6.0	43.2	0.25	9.7	0.7	0.5	0.05	0.048	0.041	0.041	0.041	0.060	0.061	0.072	0.047	0.062	0.084	0.067	0.076	0.041	0.048	0.078	0.108	
StDev (all data)	0.0	4.3	34.0	0.10	+	+	0.2	0.0	0.050	0.036	0.036	0.036	0.079	0.080	0.119	0.046	0.086	0.001	0.095	0.131	0.036	0.051	0.149	0.256	1
2*StDev (all data) b	0.0	8.7	68.1	0.20	35.3	1.3	0.5	0.0	0.100	0.072	0.072	0.072	0.157	0.160	0.237	0.091	0.171	0.003	0.190	0.261	0.072	0.102	0.298	0.513	1
Total Data Points	15	29	29	29	29	29	29	29	15	29	29	29	29	29	29	29	29	14	29	29	29	29	29	29	1
Used Data Points	15	25	28	28	27	24	26	29	8	22	22	29	20	20	27	28	27	13	27	27	29	21	27	20	
50% Data Point	7.5	12.5	14	14	13.5	12	13	14.5	4	11	11	14.5	10	10	13.5	14	13.5	6.5	13.5	13.5	14.5	10.5	13.5	10	1
50% Data Point Used	8	13	14	14	14	12	13	15	4	11	11	15	10	10	14	14	14	7	14	14	15	11	14	10	
50 Percentile	10	4.2	37.4	0.2	4.1	0.3	0.4	0.05	0.0033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.083	0.033	0.033	0.033	0.033	0.033	0.033	
4 x 50 Percentile	40	16.8	149.6	0.8	16.4	1.2	1.6	0.2	0.0132	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.332	0.132	0.132	0.132	0.132	0.132	0.132	
90% Data Point 90% Data Point Used	13.5 14	22.5	25.2 26	25.2	24.3	21.6	23.4	26.1	7.2	19.8	19.8	26.1	18	18 18	24.3	25.2	24.3	11.7 12	24.3	24.3	26.1	18.9 19	24.3 25	18 18	
90% Data Point Osed 90 Percentile	10	6.5	51.1	0.4	14.5	1.0	0.7	0.05	0.0033	0.033	0.033	0.1	0.033	0.033	0.1	0.1	0.1	0.083	0.1	0.1	0.1	0.033	0.1	0.033	1
Nat Background Level	10	6.5	51.1	0.4	14.5	1.0	0.7	0.05	0.0033	0.033	0.033	_	0.033	0.033	0.1		0.1	0.083	0.1	0.1	0.1	0.033	0.1	0.033	
Ivat packground revel	10	0.5	31.1	0.4	14.5	1	0.7	0.05	0.0055	0.055	0.033	0.1	0.055	0.055	0.1	0.1	0.1	0.065	0.1	0.1	0.1	0.055	0.1	0.033	1

#### Notes

- a) Per WAC 173-340-709, data was assumed to be lognormally distributed and the natural background level was assessed as the true upper 90th percentile, whichever is lower. Data presented in this table has been sorted (low values to high values).
- b) Prior to calculating the 50th percentile and 90th percentile, ERG excluded high values from the statistical analysis to ensure that the presence of potential contamination (i.e., high values) would not artificially increase the natural background level. ERG calculated two standard deviations for each set of data and then excluded any data points that exceeded the mean plus two standard deviations. For example, the calculated mean and two standard deviations for the full arsenic data set were 6.0 and 8.7, respectively. ERG excluded any results that exceeded 6.0+8.7=14.7 when calculating the 50th and 90th percentiles.
- c) Table F-1 does not include backup calculations for analytes that had the same value for each result. For example, each result for 1,3-Dichlorobenzene was 0.083 mg/kg, therefore the 50th and 90th percentiles must be 0.083. Analytes to which this applies are so noted in Table E-1 of Appendix E.



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# APPENDIX G DETAILED SUMMARY OF PAH AND SVOC RESULTS



Table G-1. Summary of Analytical Results, PAHs and Semi-Volatiles

Semi-volatiles / PAH	Method A Soil Cleanup Level (mg/kg)	GS-1A	GS-1A (Dupe)	GS-1R	GS-24	GS-2R	SR-1A	SR-1R	SB-2A	SR-2R	ΗΙ -1Δ	HI-1R	HI -24	HI-2R	HL-3A	HL-3B	W-1A	W-1B	W-2A	W-2B	W-3A	W-3B	RR-1A	RR-1B	RR-2A	RR-2B	RR-3A	RR-3B	RR-4A	RR-4B
1-Methylnaphthalene b	7 205 - 01			-	6					20 100°		1	1		-		WIA	VV ID	W ZA	W ZD	WSA	VV 3D	INN IA	KK 1D	INI ZA	MI ZD	INIX SA	IXIX 3D	IIII TA	INIX 4D
	7.30E+01	<0.100	<0.100°	<0.100°	<0.100°	<0.100°	0.0033	0.0033	<0.100°	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	-0.002	-0.002						-0.002		-0.002		-0.002	-0.002	
1,2,4-Trichlorobenzene	1.10E+02 9.30E+03	_		_	-	-	_	-		-	_	-	-		-	-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
1,2-Dichlorobenzene 1,3-Dichlorobenzene	8.30E-02					_					-						<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
1,4-Dichlorobenzene	1.10E+01					-		_		_		-					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,4,5-Trichlorophenol	8.20E+04																<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,4,6-Trichlorophenol	2.10E+02					_						-					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,4-Dichlorophenol	2.50E+03											+ -				-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,4-Dimethylphenol	1.60E+04	_	-	-								+ _ :	-				<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,4-Dinitrophenol	1.60E+03		-					-				+ -	-	-	1		<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4-Dinitrotoluene	7.40E+00			_										-			<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2,6-Dinitrotoluene	1.50E+00	-				_					_	-	-		1		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2-Chlornapthalene	6.00E+04			-	-	-			-			1					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2-Chlorophenol	5.80E+03		_	-	-	-		1 -	<u> </u>	_	_	1					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2-Methylnaphthanlene b	3.00E+03	<0.100	<0.100	<0.100	<0.100	<0.100	0.0033	0.0033	<0.100	<0.100	<0.0033	3 < 0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
2-Methylphenol	8.30E-02	-	-	- 0.100	V0.100	-	0.0033	0.0033	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-	-	-	-	-	-	-	<0.083	<0.083	<0.033	<0.033	<0.0033	<0.083	<0.083	<0.083	<0.033	<0.083	<0.083	<0.033	<0.033	<0.033
2-Nitroaniline	8.00E+03					-				-	_	-	-				<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
2-Nitrophenol	8.30E-02					-										-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
3,3-Dichlorobenzidine	5.10E+00			-				_			_		-	-	-		< 0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3-Nitroaniline	8.30E-02	_				-		-							-		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4,6-Dinitro-2-Methylphenol	3.30E-01			-	-	-								17			<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
4-Bromophenyl-phenylether	8.30E-02		-				-			_	-				-		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Chloro-3-Methylphenol	8.30E-02		-	-	-					_		1			1		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Chloroaniline	1.10E+01		-	-	-	-	-	-		- 1	-	1 -	<b>.</b>	-	1 - 1	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Chlorophenyl-phenylether	8.30E-02	-		-	-		-			-	-		-	-	-	-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Methylphenol	8.30E-02		- 1	-	- 1		-			- 1	-	1		- 1		- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Nitroaniline	1.10E+02	-	_	-	-	-			-			1 -			-		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
4-Nitrophenol	8.30E-02	-	-	-	-	-	-	-	- 1	- 1	-	1 -	- 1	_	1 -		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Acenaphtheneb	4.50E+04	<0.100	<0.100	<0.100	<0.100	<0.100	0.0033	0.0033	<0.100	<0.100	<0.0033	3 < 0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.033	0.04	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Acenaphthylene <sup>b</sup>	1.00E-01		<0.100					1	<0.100		-	3 < 0.0033	-		_	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Aniline	4.00E+02	<0.100	<u> </u>		<0.100		0.0033	0.0033	-	<0.100	-	-	-	-	-	-	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
h	1	<b>40 100</b>	<b>40 100</b>	10 100	z0 100	z0 100	0.0022	0.0022	z0 100	<b>40 100</b>	£0.0033	20.002	40.0022	<0.0022	×0.0022	<0.0022			_				1				_			1
Anthracene	2.30E+05 2.60E+01	<0.100		<0.100	<0.100	<0.100	0.0033	0.0033		<0.100		3 < 0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	0.064 <0.083	0.091 <0.083	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Azobenzene Benzidine	1.00E-02	-				-					-	H								_		_		_						+
	*			0.400	0.400	0.400		-	0.400			-					<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)Anthracene <sup>b</sup>	2.90E+00				<0.100			1	<0.100		_	1	1	_	_		<0.033	<0.033	<0.033	<0.033	0.361	0.252	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	1
Benzo(a)Pyrene <sup>□</sup>	2.90E-01				_			_	<0.100		_	+	_	_	_	0.0042	<0.033	<0.033	<0.033	<0.033	0.377	0.244	<0.033	<0.033	<0.033		<0.033	<0.033	<0.033	
Benzo(b)Flouranthene <sup>□</sup>	2.90E+00				_	_	_		<0.100		_	_	_	_	_	0.0116	<0.033	<0.033	<0.033	<0.033	0.595	0.324	<0.033	<0.033	<0.033	<0.033	0.06	<0.033	<0.033	<0.033
Benzo(ghi)Perylene <sup>b</sup>	1.00E-01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0107	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.003	<0.0033	0.0086	<0.033	<0.033	<0.033	<0.033	0.194	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Benzo(k)Flouranthene <sup>b</sup>	2.90E+01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0121	0.0033	<0.100	<0.100	<0.0033	< 0.0033	<0.0033	<0.0033	<0.0033	0.0083	<0.033	<0.033	<0.033	<0.033	0.408	0.262	<0.033	<0.033	<0.033	<0.033	0.039	<0.033	<0.033	<0.033
Benzoic Acid	3.30E+06			-	- 1		- 1					1 -	- 1	-	-		<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzyl Alcohol	8.20E+04	- (	- 1	- 1		- 1				-	17-41		- 1				<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Biphenyl	2.00E+02														ii		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Bis(2-Chlroethyl)Ether	1.00E+00	-	-	-	-					- 1						- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Butylbenzylphthalate	1.20E+03			- 1	- 1							1					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Carbazole	8.30E-02		- 1	- 1	- 1	-											<0.083	<0.083	<0.083	<0.083	0.085	0.088	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Chrysene <sup>b</sup>	2.90E+02	<0.100	<0.100	<0.100	<0.100	<0.100	0.0229	0.0054	<0.100	<0.100	<0.0033	< 0.0033	<0.0033	<0.0033	<0.0033	0.0048	<0.033	<0.033	<0.033	<0.033	0.444	0.314	<0.033	<0.033	<0.033	<0.033	0.066	<0.033	<0.033	<0.033
Di-n-Butylphthalate	8.20E+04	-	- 1	-	-	- 1	- 1	- 1		- 1		-		-			<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Di-a-Octyl Phthalate	8.20E+03	-	- 1	- 1	-		- 1		1	- 1	- 1	-	-	-	-	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	+
Dibenz(a,h)Anthracene <sup>b</sup>	2.90E-01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0033	0.0033	<0.100	<0.100	<0.0033	3 < 0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	0.038	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	+
Dibenzofuran	1.00E+03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	+
Dibenzothiophene	1.20E+04					<b>—</b>			-			t	1	1	1	1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	+

Semi-volatiles / PAH	Method A Soil Cleanup Level (mg/kg)		GS-1A (Dupe)	GS-1B	GS-2A	GS-2B	SB-1A	SB-1B	SB-2A	SB-2B	HL-1A	HL-1B	HL-2A	HL-2B	HL-3A	HL-3B	W-1A	W-1B	W-2A	W-2B	W-3A	W-3B	RR-1A	RR-1B	RR-2A	RR-2B	RR-3A	RR-3B	RR-4A	RR-4B
Diethylphthalate	6.60E+05		-	1-	1	1-			ĪĒĬ	ī - ī	i = i	- 1	-	-		- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Dimethyl Phthalate	8.30E-02			-	-	- 1	1			- 1					1: = 11	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Flouranthene <sup>b</sup>	1.00E-01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0179	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0045	<0.033	<0.033	<0.033	<0.033	0.618	0.420	<0.033	<0.033	<0.033	<0.033	0.056	<0.033	<0.033	<0.033
Fluorene <sup>b</sup>	1.00E-01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0033	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Hexachlorobenzene	9.60E-01		-					-	-	-	· -	-	-	-		† †	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Hexachlorobutadiene	5.30E+00	-		-	-			- 1	- 1	- ]				- 1			<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Hexachlorocyclopentadiene	7.50E+00	- ,	- 1	-	-	-	- 1	- 1	- [	-	- 1	- 1	- 1	- 1	- 1	-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Hexachloroethane	8.00E+00			-	-		- 1	- 1			- 1	- 1	-		- 1		<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Indeno(1,2,3-cd)Pyrene <sup>b</sup>	2.90E+00	<0.100	<0.100	<0.100	<0.100	<0.100	0.0078	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0091	<0.033	<0.033	<0.033	<0.033	0.236	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Isophorone	2.40E+03		- 1	- 1	- 1	-	- 11	1	14 41	i - j	j it	11 11	1441		iiit	i - 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
N-Nitroso-Di-n-Propylamine	3.30E-01	-		- 1	-	-		- 1	i - T	-	- 1					-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
N-Nitrosodiphenylamine	4.70E+02						-			100		-	-	-		-	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
N-nitrosodimethylamine	3.40E-02	- 1	- 1	- 1	- 1		- 1	1	1		1 = 1	1 - 1					<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Naphthalene <sup>b</sup>	5.00E+00	<0.100	<0.100	<0.100	<0.100	<0.100	0.0033	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Nitrobenzene	2.20E+01										+	-	-	-			<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Pentachlorophenol	4.00E+00		- 1	-	-	-			J - I (	- [		- 1	- 1	- 1	- 1	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Phenanthrene <sup>b</sup>	1.00E-01	<0.100	<0.100	<0.100	<0.100	<0.100	0.0082	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	0.384	0.753	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Phenol	2.50E+05	- 1	- 1	-	-	-	- 1		- (	- [	- 1	- 1	- 1	- 1	- 1	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Pyrene <sup>b</sup>	2.30E+04	<0.100	<0.100	<0.100	<0.100	<0.100	0.0138	0.0033	<0.100	<0.100	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.033	<0.033	<0.033	<0.033	0.745	1.24	<0.033	<0.033	<0.033	<0.033	0.048	<0.033	<0.033	<0.033
Pyridine	1.20E+03		- 1		- 1	-	- 1		- 1	-	1 - 1		1 - 1				<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Tetrachlorophenol	2.50E+04	-	- 1	-	- 1	-	- 1	- 1	- 1	- 1	- 1					- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
Bis(2-Chlroethoxy)Methane	2.50E+03	E	- 1				1	1	1	- 1						j j.i	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
bis(2-Ethylhexyl)Phthalate	1.60E+02	E - 1	- 1	- 1	- 1	- 1	4 - 6	10 6	16 - 6	- i				-		- 1	<0.083	<0.083	<0.083	<0.083	0.121	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083
bis(2-chloroisopropyl)ether	8.30E-02	- )		- 1	- 1	-						-	-	-	-	- 1	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083	<0.083

#### Notes:

- a) Refer to the text Section 4, Analytical Results, and Appendix H for more detail on development of site-specific Method A cleanup levels.
- b) Compounds included in PAH analysis
- c) Although the noted results exceed the calculated natural background level of 0.0132 mg/kg, the results are at the PQL for these sampling points.

Yellow highlight = result exceeds MCTA

Orange highlight = result exceeds natural background level but is below MTCA Method A Cleanup Level